

ROTUNDA

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A Dying Paradise

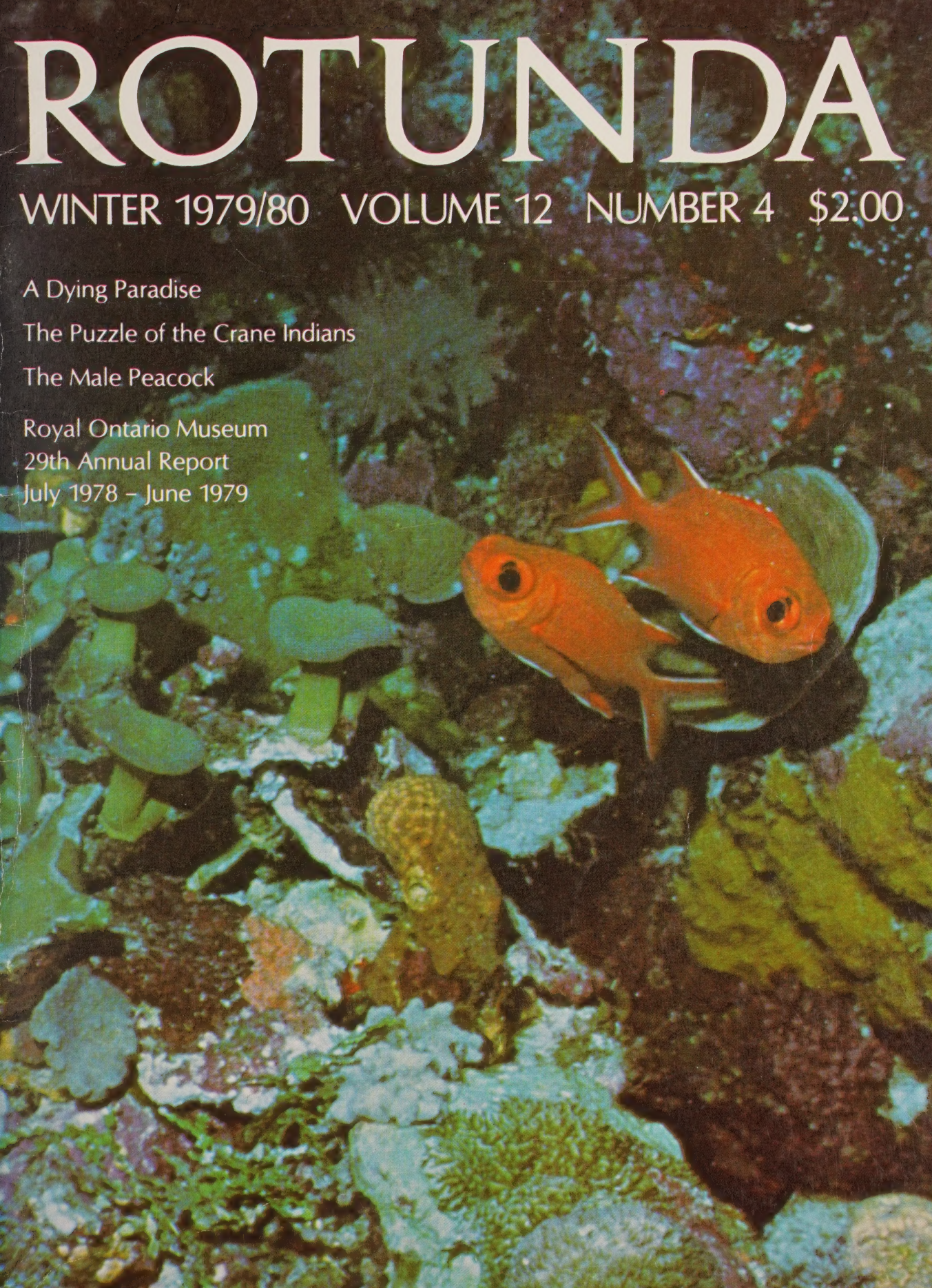
The Puzzle of the Crane Indians

The Male Peacock

Royal Ontario Museum

29th Annual Report

July 1978 – June 1979



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ROTUNDA

the magazine of The Royal Ontario Museum

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Cover: A pair of pygmy squirrelfish (*Myripristis vittatus*) in a cave at forty-five metres off Isle Fouquet, Peros Banhos. (Photo: A.R. Emery)

Picture credits: map 3 (bottom) drawn by Linda Belbin; 10 (2), 22, 24, 25, 26 (right), 27 (2), 28 (2), 29 (2), 30 (2) Brian Boyle, ROM; 2, 3 (top), 4 (2), 5, 6, 7 (top), 8, 9 A. R. Emery, ROM; 7 (bottom) A. R. Emery, ROM/R. Winterbottom, ROM; 20-21 reproduced from *The Age of Chivalry* by kind permission of the editors of the National Geographic Society; map 12, charts 15, 16, 18 (top) drawn by Michael Peters; 17, 18 (bottom), 26 (left) Photography, ROM; 32 William C. Pratt, ROM; 19 (top) Edward S. Rogers, ROM; 11, 13 (2), 14, 19 (bottom) Mary Black Rogers, ROM.

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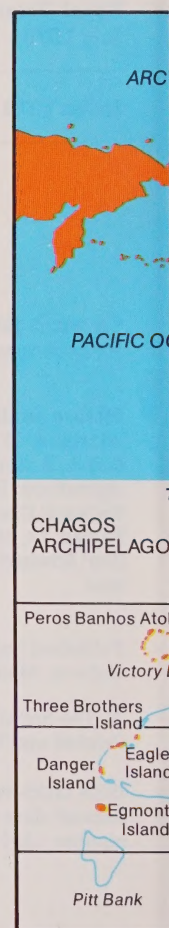
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A Dying Paradise

A TROPICAL PARADISE drenched in brilliant sunlight and surrounded by an indigo sea, the thirty-five islands of the Chagos Archipelago in the central Indian Ocean are isolated from their nearest neighbours by 800 to 1,600 kilometres of empty ocean. The closest land masses are more than 3,200 kilometres away. Chagos has no permanent residents—it is in the middle of nowhere.

The islands are British territory, although the largest and most southerly island, Diego Garcia, is leased to the United States Navy. The island economy, which was based on coconuts, died with the end of slavery and the replacement of coconut oil by synthetics. The people were removed to Mauritius (some forcibly), carrying with them tales of a vast fishery potential, turtles, and dugongs. The tales have created a need for the British Government to assess the real potential of that fishery, so that reasonable regulations can be imposed to protect the resource in perpetuity.

Scientists have rarely visited the islands; in fact, the most accurate and up-to-date map was drawn in 1837 by Captain Moresby. We knew of the Chagos Archipelago only as flyspecks on a map of the Indian Ocean, but we were very interested in their coral-reef fishes. Tantalizing results from two collections, one made at the turn of the century and the other in water less than three metres deep in 1967, included endemic species found nowhere else in the world. Could there be more new species? Con-

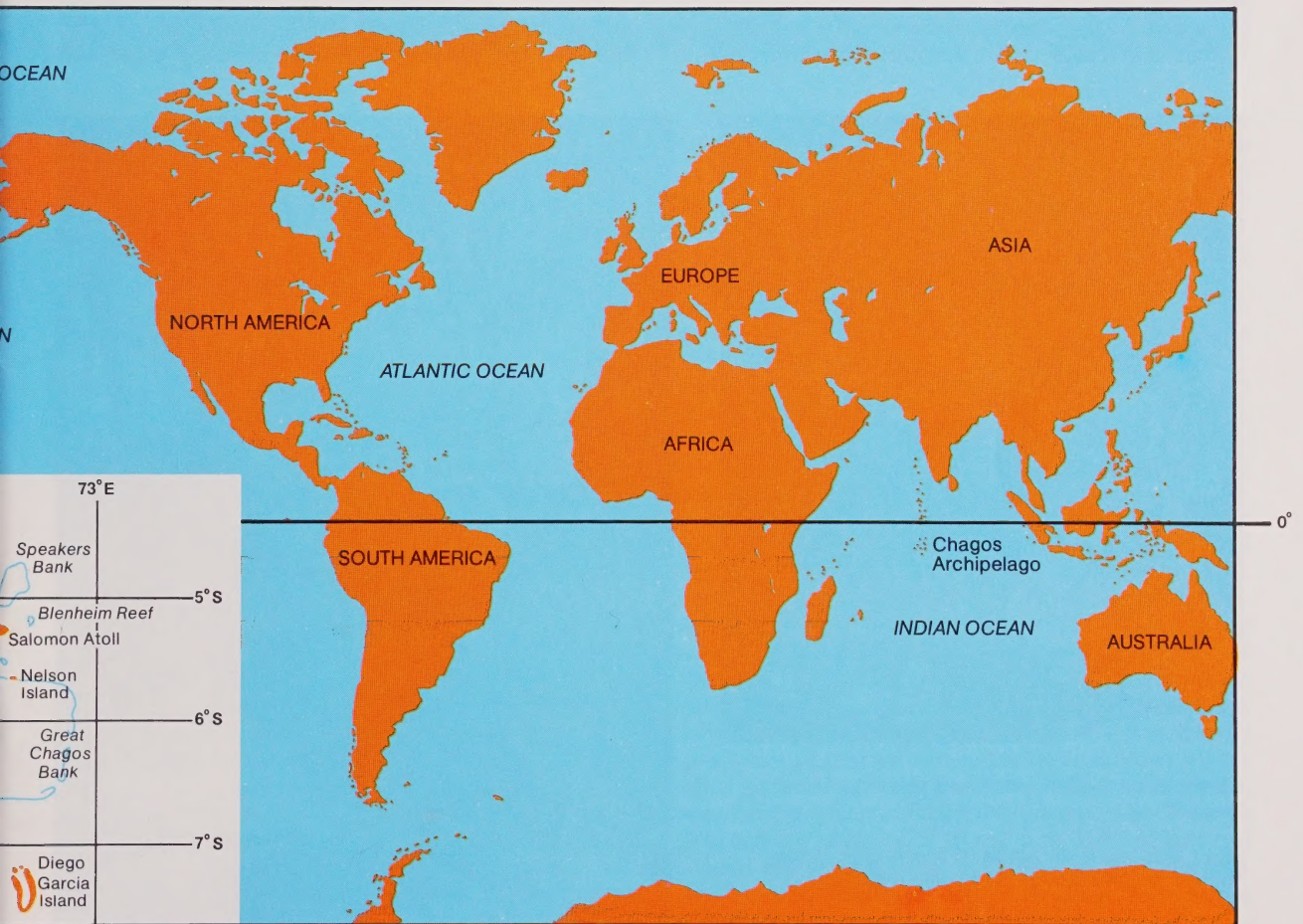




Left: The beach at Isle du Coin on the open ocean side, showing palms and casuarinas and the low undergrowth of *scyvola*.

Expedition to the Chagos Archipelago in the Central Indian Ocean

Alan R. Emery and Richard Winterbottom



Opposite page: A lurking predator, the blotchy rockcod (*Epinephelus fuscoguttatus*) on the reef-top at Salomon Islands.

sidering the isolation of the islands, how did the fishes get there and where did they come from? Is Chagos a halfway house for animals drifting across the Indian Ocean? Do species that have evolved on these islands and occur nowhere else need to be protected?

When we were invited to participate in an expedition of the British Armed Forces to these islands, we had less than three months in which to attempt to find funds and equipment to support our effort. Many of our fund-raising endeavours failed simply because of the short time available, but a number of local industries supplied materials, chemicals, and equipment. The Canadian Armed Forces agreed to transport us and our equipment to England on flights that were already scheduled. The supplies of the Department of Ichthyology and Herpetology were raided for this once-in-a-lifetime opportunity to collect and observe fishes in an area where scientists had done almost no similar work, and which it was unlikely they would have a chance to visit in the foreseeable future.

Expeditions of this nature provide "adventure training" for members of the British Armed Forces. To qualify for funding, the expedition proposal must be organized and submitted by a member of the Forces, it must provide rigorous training and difficult living conditions, and it must have a scientific objective. Captain

John Griffiths of the British Army made such a proposal based on the need to inventory the resources of the Chagos Archipelago. These expeditions are able to draw on supplies not in active use (such as tents, stoves, and camp cots) and to tap the resources of the Air Force and Navy for transport. From our point of view, this made it one of the best-equipped expeditions a scientist could hope to accompany. True, food was derived from army composition rations, but when you are really hungry it is surprisingly tasty.

Although we had previously shipped more than a tonne of equipment, we carried with us baggage weighing more than a hundred kilograms, which contained microscopes, tape recorders, cameras, film, and a few clothes. From England we travelled by Hercules aircraft to the Indian Ocean—a noisy three-day trip. Our equipment took up most of the space in the aeroplane so that we spent much of those three days crawling or tripping over it and lying or sitting on it. From Diego Garcia, the United States military base, we travelled by ketch to the islands of Peros Banhos about 240 kilometres to the north, on the outer edge of the archipelago.

Our arrival in Peros Banhos saw the two of us immediately peering intently at the wet sand exposed by the low tide. John Griffiths was not very impressed



Above: Inside the RAF Hercules transport en route to Diego Garcia.

Right: Our tent in the jungle on Isle du Coin, Peros Banhos, where the main base camp was located.

Opposite page: Laboratory conditions on Eagle Island, Great Chagos Bank.





when we pointed out with great enthusiasm the existence of tiny white fish that were living in the rivulets only about a centimetre deep. He had already been there for four months and must have expected something more exciting than that from the fish experts. He did not have long to wait. Within days expedition divers were competing with one another to see who would collect the biggest or the rarest fish for the "fish team".

The first two days were spent in setting up our laboratory and our living quarters, in making "check-out" dives in the major areas we would be working in, and in trying desperately to adjust to the heat. Our daily routine soon settled down into a pattern of rigorous activity. Breakfast was at dawn, with the first dive scheduled to take place about two hours later. It was always a rush to get our diving and collecting gear ready and down to the boats in good time to reach the dive location, often almost an hour away. Using scuba gear in remote locations demands extra care in planning, because an error can be fatal. Morning dives were organized to allow us to sample a deepwater habitat. It is not possible for a diver to make two deep dives on the same day without getting decompression sickness (the bends)—unless a long period of time separates the two dives, or unless the diver spends a long time in decompressing near the surface. For many reasons, not the least of which was the danger of shark attack to a diver suspended over deep water, it was expedition policy to confine dives later in the day to shallow water, or to depths that did not require decompression on ascent.

On completing a collection, we rushed back to the laboratory to sort the fish, separating species that we had not previously collected from those of which we already had samples. The new species were carefully pinned out so that the fins were erect. A solution of formalin was dripped onto the erect fins to fix them in place. The fish were then transferred to an aquarium, and a series of coloured photographs was taken to record the fresh colours which the preservative causes to fade. All specimens were then carefully fixed in formalin. During this period we grabbed lunch and then began preparations for the afternoon dive, usually in water less than nine metres deep. The sorting, identifying, pinning, photographing, and preserving were then repeated for the afternoon collection.

At 6:00 p.m. we attended a planning meeting for the next day's diving program. Decisions on depth and time underwater were calculated from tables of decompression limits. Habitat and travel time to the location were discussed. The number of diving assistants and shark guards assigned was based on the aims of the dive. Dinner was at 6:30 and a briefing at which everyone was given his assignment for the next day followed at 7:00. The number of new fish was usually great enough that we two had to finish our day's work after the briefing. With the documentation completed, we mixed the chemicals for use the next day. Then we dragged ourselves back to our tent and fell into bed—until the wake-up call at dawn the next morning. Any medical problems had to be dealt with before breakfast or after the briefing session, since the doctor, like all other members of the expedition, was a

working diver. Coral cuts, ear infections, and septic sores made up the usual range of problems, and there was always a line-up awaiting the doctor.

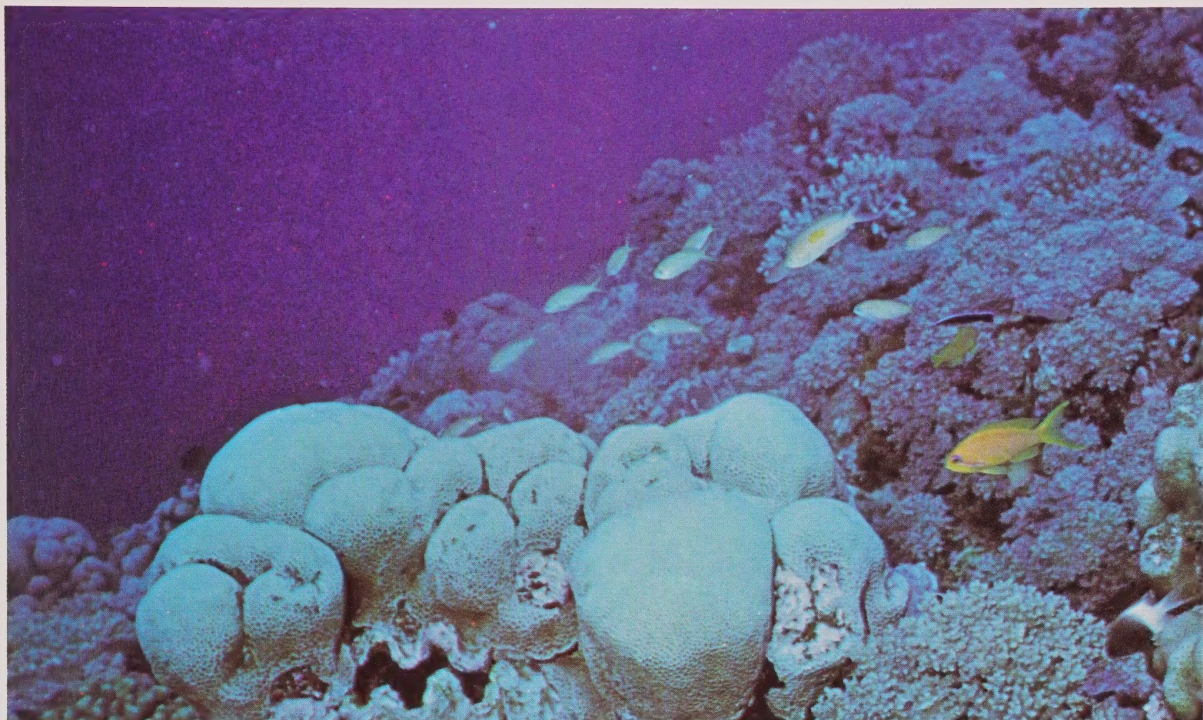
Despite occasional infections and the expedition policy of not usually allowing scuba diving on Sundays, there were only three days during the entire two-and-a-half-month period we were there on which we did not collect fish. In fact, between spells of diving we also tended nets and traps set to collect fish. Often while travelling we trolled lines—full speed behind a 20 HP (15 kW) motor—and caught such things as tuna, jacks, barracuda, snappers, and groupers. All of these of course were photographed and pickled, much to the disgust of the cook. Not all collections were made in the course of dives; some of the most successful ones were made as we waded in the intertidal zones. We averaged just over two collections a day. When the expedition ended, we had made a total of 124 collections, of which 72 employed scuba gear (and we were completely exhausted). Each of us spent more than eighty hours underwater on scuba. The “fish team” amassed more than 460 man-hours underwater (approximately 19 days). The remaining collections involved snorkel swimming, wading, angling, and netting.

How does one even attempt to survey the fish fauna of a group of islands that includes the world's largest atoll in two and a half months? Before we left Toronto,

we had studied maps and from our knowledge of other atolls and coral reefs had guessed what the habitats would be like. On our arrival at Peros Banhos we quickly planned a series of collecting stations in the easiest areas, where we were least likely to encounter heavy waves, currents, or sharks. From those timid beginnings, we went on to attempt to sample every habitat we could find, from the wet sand at low tide to caves forty-five metres below the surface, from the quiet coral gardens of the lagoons to the walls of the sheer coral cliffs which plunge several thousand metres into a dark blue abyss.

Complex, diverse, confusing, overwhelming—these are the adjectives that best describe a diver's first attempts to make sense out of what he sees on a coral reef. A swimmer is always awed by the beauty and power of the sea as he descends into a realm that is deceptively welcoming. The ease and grace of movement exhibited by the creatures of the reef disguise the fact that the diver is in an environment that is somewhat alien to him. Although not the equal of fishes, a scuba diver can move easily in three-dimensional space and feel freedom from gravity in the slow motion imposed by the density of the water. The offshore reef at Chagos sloped to about nine to twelve metres within a hundred metres of the breakers—a gentle underwater gradient either



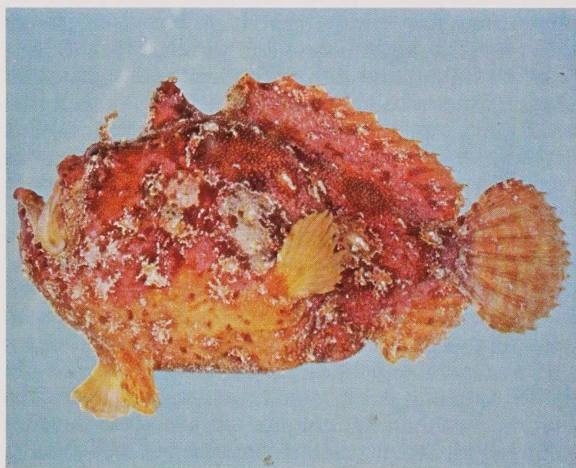


caressed or beaten by the ever-present, moody oceanic waves. This upper slope, covered by a dense carpet of many species of coral, ended abruptly. The coral slope became a coral wall, a sheer vertical cliff, in some places with ledges, in some places undercut or even punctured with black, hydroid-filled caves.

A diver swimming beyond the edge of the slope found himself out over a dark blue endless abyss. The body sensed support in this clarity, but the mind could not easily accept it. Most divers swam back quickly and awkwardly to be within reach of the coral. The wall reached out with sea fans, brilliantly coloured soft corals, and anemones. It protected under its jutting coral myriad fishes, some tiny and living in vast schools, others heavy-bodied and designed to sit on the bottom. But lurking in those same reaches were predators such as powerful moray eels, groupers with enormous mouths, snappers with tooth-studded jaws, and grotesquely camouflaged angler and scorpion fishes.

A moving tenuous veil of small active fishes, swimming just away from the coral wall, swept tiny planktonic creatures from the oncoming waters of the open ocean. These little fishes displayed an obvious reluctance to move more than a metre or so from the wall. It did not take long to discover what kept them near the reef. The first to venture out as much as a metre immediately attracted the attention of the larger, free-swimming predators such as jacks, barracuda, and sharks.

As you swam down a vertical wall of coral to reach



Above: The anglerfish (*Antennarius coccineus*) which waves a lure to attract its prey.

Top: A mixed school of two species of golden seabass (*Anthiinae*) at the edge of the drop-off, Salomon Islands.

Opposite page: The emperor angelfish (*Pomacanthus imperator*) on the bottom is attended by a pair of bluestreak cleaner wrasses (*Labroides dimidiatus*). Above them a pair of shadowfin squirrelfish (*Myripristis adustus*) await the attention of the cleaner wrasses.

A two-metre whitetip reef shark (Carcharhinus albimarginatus) cruises above the sea-fans at twenty-five metres off Isle Boddam, Salomon Islands.



forty-five metres, the light dimmed only slightly, and the underwater cacophony of snapping shrimp, moaning squirrelfishes, and hissing waves changed so that the animal sounds were more discrete and the sounds of the sea came closer. When you rested on a deep ledge and looked down the cliff, there was a pull to explore even deeper into that blue blackness. Down there fish moved in unfamiliar patterns and shapes, but they were unreachable. The mysteries they hinted at must for now belong only to the depths. Suddenly the realization that there were only seven minutes at this depth and two had already been used up in the swim down forced you to put out the collecting equipment, to buoy the station for the following divers, to collect and observe quickly, carefully, and completely, and to record the habitat in colour photographs. Clarity of thought was impeded by the narcotic effects of the high-pressure air. What was the guide number for the flash—13—and what is 13 divided by 0.8 m? Set the aperture, set the distance on the lens—is the fish still there? Then the shark guard was tapping you on the shoulder—time to return to the surface, a journey that must be carried out at eighteen metres per minute, regardless of the load, the currents, which were sometimes down-welling, or the presence of sharks attracted by your activities and your catch. Rising from these depths was somehow a mixture of relief and disappointment; thought processes cleared rapidly and you wondered why the arithmetic had been difficult.

Overhead was the underwater edge of the cliff, and beyond that the anchor line leading to the boat. The shark guards signalled us to assemble at the anchor, and one by one the working divers were sent to the surface to unload the catch, remove their diving gear, and climb into the boat. There were often sharks in the area but usually they presented no threat. When they were swimming and rushing around us as we rose to

the surface, a shark guard was stationed just below the boat to push them away. Divers rose to the surface and were pulled in over the side of the boat with catch, equipment, and diving gear still attached—to minimize the time a diver's feet dangled unprotected below him.

We dived on the three major atolls contained within the Chagos Archipelago: Peros Banhos, the Great Chagos Bank, and Salomon. Our trip to Eagle Island on the Great Bank began in drizzle, which continued almost uninterrupted for the week we were away. The thirteen-hour trip was rough but at last the ketch was rocking gently at anchor off the reef in the pouring rain and the gathering dusk. Two of our team, in the inflatable boat, disappeared shoreward through a narrow pass into the lagoon to unload the first cargo of gear. Half an hour later we were puzzled by two white orbs approaching the ketch from the lagoon. Close inspection proved them to be the faces of our two army companions. Apparently they had been negotiating the "rocks" in the lagoon when they noticed that a large number of them were moving. Realizing that they were among a school of three- to three-and-a-half-metre-long sharks, they proceeded with great initiative to run the inflatable boat at full tilt as far up the beach as possible. They never did reveal how they got the boat back into the water—we suspect they sat in it and waited for the tide to float them off.

The following morning the four of us took the next load in. The sharks were still there. We donned our masks and leaned over the side, muttering incomprehensibly through our snorkels as the huge beasts glided around two metres below us. This was too much for Bob Perry, one of the shark guards. Pulling on his mask, he put his face into the water just as one of the monsters passed beneath the boat. Bob's attempts to crane his neck to follow the shark precipitated him in-

to the water directly over a second behemoth. Bob was out of the water so fast that he hardly had time to get wet, but the scandalized look on his face was so funny that John Smith, our other shark guard, in a paroxysm of mirth lost his balance and disappeared over the side. The sharks meanwhile, obviously objecting to this human bombardment, took off thunderously across the floor of the lagoon. We had by now identified them as relatively harmless and inoffensive nurse sharks, and soon we were swimming among them and even spearing other fish in their presence. On occasion we counted nearly a hundred of these sharks in the tiny lagoon and we speculated that they came there to mate or to drop their young (although we were never able to catch them doing either).

Our trip to Salomon was highlighted by a wild, exuberant swim in the pounding surf on the windward shore of Isle Boddam. None of the other members of the expedition had any experience in this kind of thing, and so the two of us made the fish collection by ourselves. The waves tossed us around like bits of flotsam as the surges rushed us back and forth between jutting wedges and deep coral-studded channels. Coral flashed back and forth beneath us through a haze of bubbles and foam as we made our collection, which included half a dozen species we had found nowhere else. We finally escaped back to shore, one of us with a coral graze and both sharing a feeling of sheer exhilaration and deep respect for the sea.

By the last week of our stay we were able to predict what species we would collect in each habitat, and usually we found only one or two unfamiliar species in the nets when we returned to the surface. More than 550 species were photographed and preserved for return to the shelves of the Department of Ichthyology at the ROM and for distribution to other major museums throughout the world. At a conservative estimate, we collected about sixty to seventy per cent of the fish species present at Chagos. Thus we estimate that approximately 800 to 900 species of fish occur there. It is perhaps trite, but it is also true, to say that research raises more questions than it answers, and our expedition was no different. But we were able to answer a number of questions that we had posed before we left, as well as a number that presented themselves to us when we had been there for a while.

We knew these islands had begun their existence in the far distant past well over sixty million years ago—as a result of the enormous tectonic forces that were inexorably grinding the Gondwanaland India into the Laurasian Asia and throwing up the now majestic Himalaya Mountains. A split in the ocean floor as two crustal plates separated created a long chain of volcanic underwater mountains which now runs south from the western border of India, knifing into the central Indian Ocean. These mountains broke through the ocean surface, but they were mountains of barren lava, completely devoid of life. Yet now they are teeming with luxuriant underwater animal and plant growth so typical of coral reefs. How did the stony corals,

A diver decides not to spear any of the one-metre great barracuda (Sphyræna barracuda) milling around.



als, the stiff gorgonians, the tiny cave-dwelling fishes, and the slow-crawling sea urchins get there? Where did they come from: Africa, India, Sumatra, Borneo, Australia? All these areas border the ocean whose waves crash on the shores of Chagos. Before our departure, charts had told us that the ocean current travelled from Borneo and Sumatra westward to Chagos and then from Chagos to Africa, where the current split to travel north and south. We assumed therefore that all the fauna would be derived from the eastern Indian Ocean. But we were wrong. The fishes at Chagos were much more like those from Africa than those from Borneo. How did they get there? Surely they could not have breasted the currents.

Then we remembered our dives in the rain at Eagle Island, where we had first noticed some very unusual features. The coral was all secondary growth and large underwater plants were virtually absent. The normally active coral growth and algae that form the toothed shoreline facing and deflecting the waves that smash into the windward coasts were missing. Did that mean something? At Salomon we had noticed even more evidence that conflicted with the characteristics of a normal atoll. The lagoons were about fifty per cent coral covered, but only about ten per cent of the coral was living. Large underwater drifts of sand had collected behind the islands, indicating that the islands were gradually being eaten away and deposited in the lagoon, leaving vast shallow flats planed off at wave depth and almost barren of life. Fishes were avoiding the deeper waters of the lagoon. The large numbers of species that normally are found feeding on underwater grass beds and algae patches were missing, because plants were scarce. Many of the predators that would have fed on these fishes were not present or were there in reduced numbers. We recalled our mad swim in the pounding surf at Salomon. Although

we had been flung about like corks, it had been impossible not to notice the deep, unusually sloped surge channels, full of coral boulders, grinding away at the reef. In an active reef the deep surge channels at the outer edge of the reef slope upward into shallow water so that as the buttress of coral wedges the waves into the channels, the waves sluice harmlessly upward. Those channels had not been sloped. Their depth had been uniform and had ended in an abrupt wall, a wall that was slowly being ground down and that was retreating towards the island it protected.

The atolls of Chagos are dying. The reefs are not protecting themselves, the islands are disappearing, and the corals are being sheared off in the shallows and replaced by shifting sands on which very few species of coral can secure a foothold. These atolls will ultimately disappear beneath the waves. Questions took shape in our minds. How long has this been going on? Obviously the atolls grew and were a dynamic, powerful ecosystem at one point in history—the Great Chagos Bank is still the largest atoll in the world.

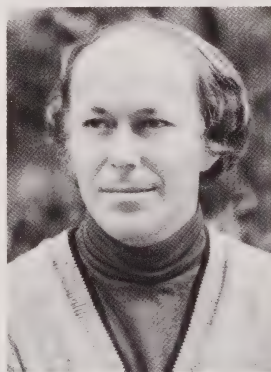
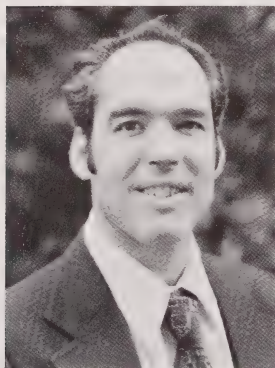
What caused the decline in vitality? We cannot at this point answer those questions—we don't know why the atolls are dying.

Part of the answer, though, may be contained in the questions about the origin of the fishes. Perhaps the reasons that the fish are derived from the down-current and not the expected up-current direction are in some way related to the changes in conditions that are now killing the atolls. Perhaps there was a historic weather shift in the past few hundreds of thousands or millions of years that has made it impossible for the reefs to remain healthy. If this fact is so, it may have confused our interpretation of how the fish got to Chagos.

The expedition is over now. Our shark guards and diving companions have returned to England. The islands and their underwater coral gardens are once again deserted by man. It remains now for the two of us to work up the material and publish our scientific findings—a task that will undoubtedly take several years.

Alan Emery was born in Trinidad in the West Indies, but has spent most of his life in Canada; he grew up in southern Ontario. His interest in fishes developed early and following completion of his B.Sc. (1962) at the University of Toronto, he worked at the Bellairs Institute (Barbados) of McGill University, where he received his M.Sc. in 1964. He then spent a year with the Fisheries Research Board of Canada at St. Andrews, New Brunswick. He studied at Cornell University and the University of Miami's Institute of Marine Sciences for his Ph.D., which was completed in 1968. For the following five years he worked as a research scientist with the Research Branch of the Ministry of Natural Resources in Ontario. Dr. Emery joined the ROM's Department of Ichthyology and Herpetology in 1973. His research interests are broad-ranging and include the study of fish evolution and relationships, ecology, and reproductive and sound communication behaviour. These studies have taken him from the equator to the high Arctic.

Richard Winterbottom joined the ROM's Department of Ichthyology and Herpetology in 1978. Born in Livingstone, Zambia, he received his undergraduate training at the University of Cape Town, South Africa. He completed his Ph.D. at Queen's University, Kingston, Ontario, in 1971. Postdoctoral fellowships at the Smithsonian Institution and the National Museum of Natural Sciences, Ottawa, followed. He went back to South Africa where he taught ichthyology at Rhodes University and curated the fish collections of the J.L.B. Smith Institute of Ichthyology from 1973 to 1976. He returned to Canada in 1977. Current research activities include the zoogeography of Indo-West Pacific fishes, the genealogy of the families of perchlike fishes, and the systematics/biology of gunnels and pricklybacks of Canada's east coast.



AN EXHIBITION OF THE CHAGOS EXPEDITION WILL BE ON DISPLAY IN THE LOWER ROTUNDA, ROYAL ONTARIO MUSEUM, UNTIL THE END OF MARCH, 1980.

The Puzzle of the Crane Indians

A Name-Game Through Two Centuries in Northern Ontario

Edward S. Rogers and Mary Black Rogers

THE PUZZLE "WHO WERE THE CRANES?" began for us in 1958, when ethnographic field work was initiated in the community of Round Lake, Ontario (the name has since been changed to "Weagamow Lake"—see map). In this remote Indian village and its surrounding territory were to be found descendants of a group of Northern Ojibwa who had been known by the name "Cranes" for as long as anyone then living could remember. What began as a one-year observation by Dr. E.S. Rogers of the ROM to study their ways of living and of relating to the demanding Subarctic environment of northern Ontario has continued to this

day, nourished substantially by Dr. Mary Black Rogers's two-year residence in the village in 1968–70. (For primary reports, see D. Spurgeon 1959, E.S. Rogers 1962, M.B. Black 1971.) Numerous shorter field trips also contributed; these came to an end in the summer of 1975, by which time many of the Weagamow elders from whom we had been learning were gone (see M.B. Rogers and E.S. Rogers 1978:17, and for the contribution of some younger members see Sophia Williams and Saul Williams 1978).

Since 1975 we have continued to collect another kind of data that has proved extremely useful for



Simeon, weaving a legend of Old Crane such as he heard from grandmothers years ago.

checking and extending field information, by searching through the archival records preserved by fur traders, missionaries, and government officials. The community of Weagamow Lake is small; there were about 250 people in 1958 and there are now a little over 400. Not only is the community small; until quite recently it has also been extremely isolated. (The Weagamow area treaty was signed in 1930.) Situated in the interior of northern Ontario near the headwaters of streams flowing into both Hudson Bay and James Bay, the Crane Indians were remote from the trade routes (see map) and so did not experience the full effects of the fur trade until late—in fact, no post was established in their territory until the present century. Missionaries and other agents of contact also did not generally arrive on the scene until after 1900. Ac-

cordingly, the elders of the village possessed a fund of knowledge of what Indian life was like before it had been affected too severely by contact with Euro-Canadian society. However, the archival materials support their stories of their ancestors' trips out of their territory to visit trading posts and missionaries. These written records, together with the overlapping first-hand field data, have made possible considerable strides towards the solution of the puzzle, and hence towards more fundamental ethnological goals.

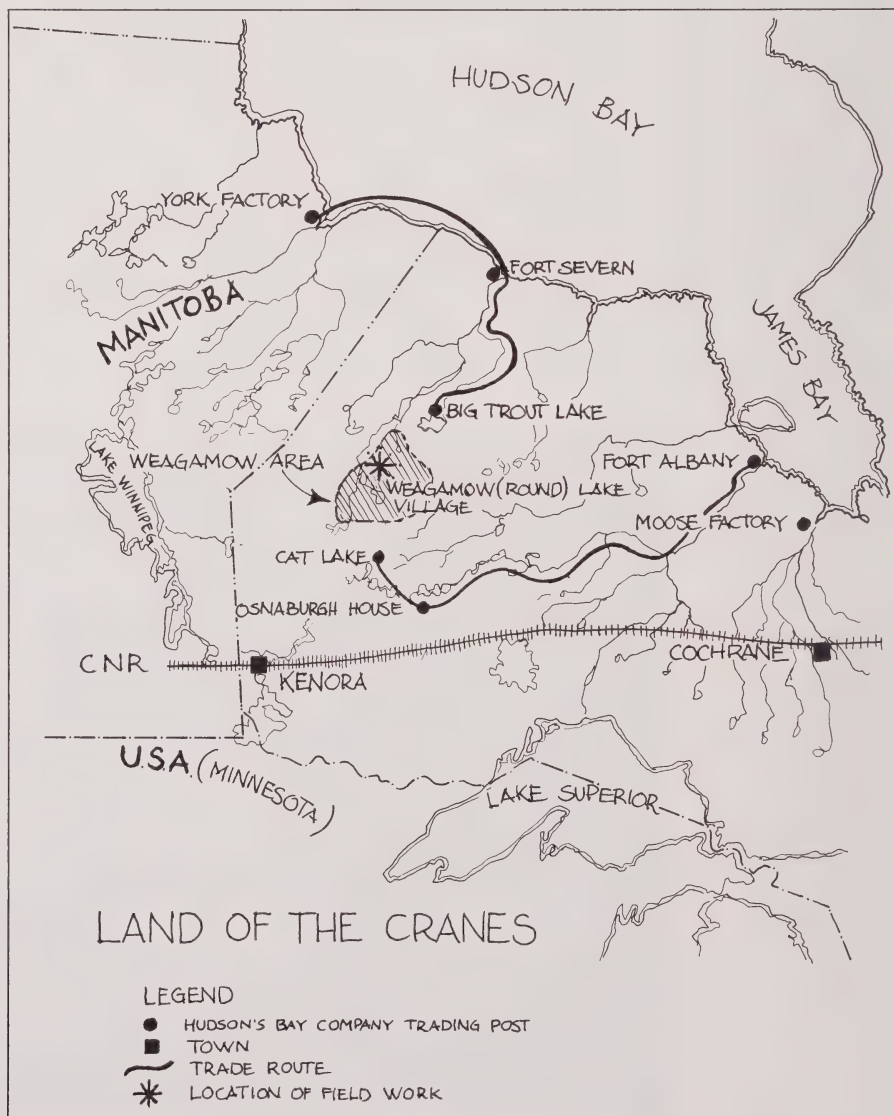
What we report here are some results of just two of the several categories of data we have been assembling: genealogies and a group identity name. Specifically, we show how a certain success in tracing ancestors aided in answering the question "Who were the Crane Indians?", and, conversely, how the ex-

Map of northern Ontario, showing the Weagamow Lake (formerly Round Lake) community, the "Weagamow Area", and the major trade routes in the time of the fur trade.

NORTHERN ONTARIO
North from the CN railway line to Hudson Bay, west of Cochrane; bush hinterland until recent years.

WEAGAMOW AREA
About 8,000 kilometres of land used by Weagamow Lake hunters and trappers; a major part of the Crane Indian territory of the past 200 years.

TRADE ROUTES
Up the Severn River system to Big Trout Lake; up the Albany River system to Osnaburgh House and later to Cat Lake post; always stopping short of the Cranes' territory until recent years.

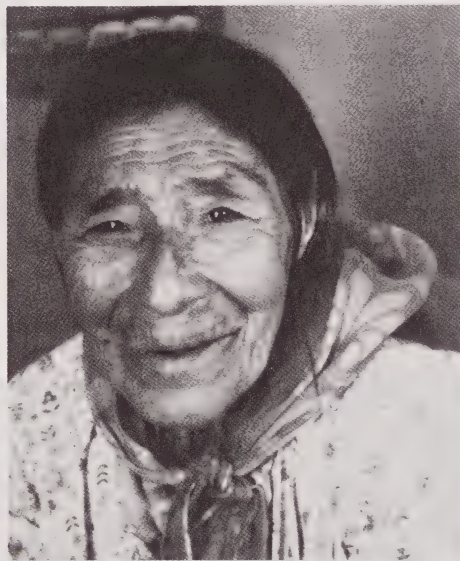


istence of the group name aided in compiling Weagamow Lake genealogies that go back 200 years or more.

At Weagamow Lake the elders told that in the past their group had been known as the *ojičakonsak*. This word means “cranes” (or probably “little cranes”), although most elders were monolingual and were not aware of the English equivalent. They attributed the name to a semi-legendary man called Ojičakons, and their tales made him out to be a kind of figurative “father of our people”. But no one knew his possible relatives or descendants—it was all too remote. One or two, however, ventured to place his era as more than 150 years ago and could point out on a map the reputed location of his burial.

Interestingly enough, the archival materials sup-

port their tales. It appears from the Osnaburgh House traders' records that “Captain Utchechauck”—or alternatively “the Crane” or “Captain Crane”—died about 1805. (The Hudson's Bay Company of this period dubbed its leading trappers “Captain”.) We assume this to be Ojičakons, though we have no clue yet as to the reason for the suffix *-ons*—apparently a diminutive. The offspring of a man were sometimes collectively referred to by the plural of his name, and since Crane had at least twenty-three offspring on record, most of them within the space of two decades, perhaps the name became established because so many little ones at once deserved the diminutive. It is recorded in 1788 that Crane had “a numerous family indeed three wives and 17 children” (HBCA B155/a/2:fol.12d); by 1795 he was “the father of 23 children 16 of which is



Above: Rebecca, who at the age of ninety could still recount with clarity the events of her childhood and remember the old people.

Left: Annanias, a young Weagamow Lake father, with his child, a recent addition to yet another generation, carried in the old-style cradleboard.

Sons, first only arrived at manhood, and the youngest in the Cradel" (C.A. Bishop 1974:299); and in 1804 it seems that Crane and fourteen sons and three sons-in-law formed a cohesive trading group of trappers (D. Cameron 1960:274). Subsequent records leave little doubt that as the 19th century passed and the 20th got under way, the Indians hunting north of Osnaburgh who were frequently referred to as "the Cranes" were descendants, in some manner, of the numerous family of Captain Utchechauck.

This might seem to answer our question, "Who were the Cranes?". But the matter is not so simple. The use of group names contains much slippage, and there are pitfalls in citing them as historical evidence. Even after family trees have certified that the Weagamow Lake Cranes got their name from Captain Utchechauck, the manner in which the composition and organization of the group developed over the years is elusive. It is the *definition* of this and similar groups that is the real intention of the question.

Our present answer stems from two kinds of evidence. First, we identify as part of this historical group only those Crane Indians that the references locate in the territory north of Osnaburgh House and south of Big Trout Lake during the past 200 years. Other occurrences of this or similar names we put aside for the present as coincidental. *Territory*, then, is one defining feature. The other is based on *genealogies*. We have succeeded in tracing direct descent of about half

of Weagamow Lake's core families from one or another of the sons of Crane. This was done by combining information from living memories with that from documents. Neither source alone would have sufficed.

So in two ways it was a "name-game": the group name as approached from both ends of its history, and the individual names of remembered progenitors as they merge into the names of unremembered ancestors written down by fur traders and missionaries. The identification of proper names in documents is sometimes as hazardous a business as that of group names. In this case, the conjunction of both sometimes offered a kind of finding aid—for example when the word "Crane" appeared after a name on the trappers' accounts or in the church registry. Even so, some of our conclusions have to be based on the most likely theory of how things happened. But with knowledge about the language and the naming system both of the Indians who were recorded and of the recorders, combined with a readiness to abandon pet theories when the preponderance of evidence went the other way, the piecing together of the genealogical facts resembled the process by which the confused agglomeration of the pieces of a jigsaw puzzle is brought gradually under control as the picture grows in clarity and there are fewer pieces to search for.

To show some of the problems and manoeuvres of this phase of our struggle with the Cranes, we now illustrate the three steps used to arrive at our present



Sinden, great-grandmother of Saul Williams and great-great-granddaughter of Old Crane.

conclusions with three charted examples of selected data. The first shows the documentary data, the second the field data, and the third a combination of the two.

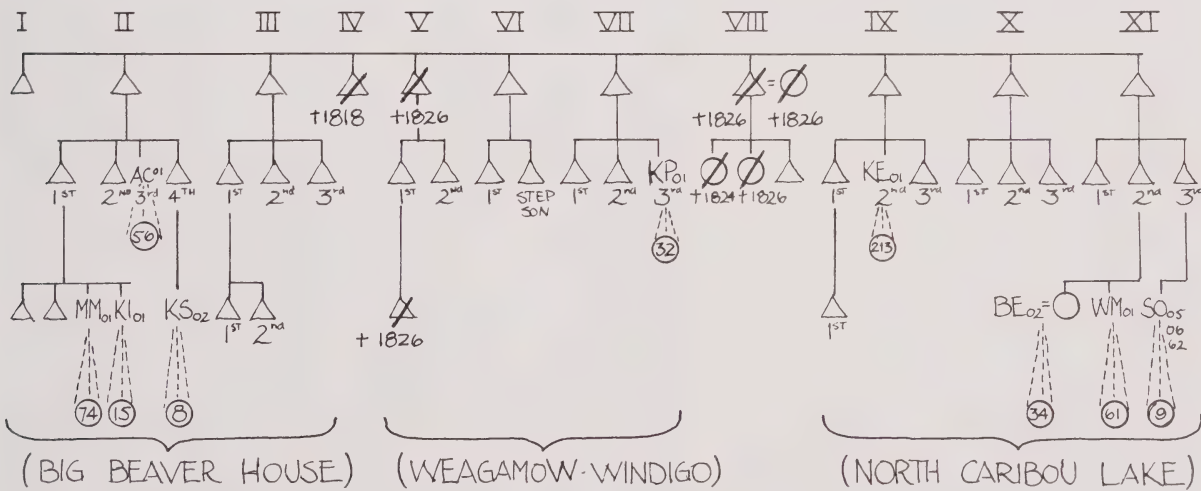
Across the top of Chart 1 (documentary data) are what we presume at this time to have been the first Ojicakonsak—eleven named Cranes as listed in the Annual Reports of the Osnaburgh post from 1813 through 1828 (HBCA B155/e/1-11 and B155/a/38,39), who there is reason to believe were among the many sons of Captain Utchechauck. The eleven are ordered not by age but in the three “hunting groups” described in the 1828 report (HBCA B155/a/39: fol. 32d). There is evidence (partly from field data) to suggest their relative locations or hunting lands at that time. The hunting group at the far right, which probably used an area around North Caribou Lake, is of special importance and will be examined again in more detail.

Chart 1 also shows the genealogical dead-ends, where there is no further information about descendants. For eight of the twenty-two dead-ends names were given; so far these are of no help. All are documented Cranes, as far as descent goes, but as yet they have not been connected with any line or progenitor provided by field data. On the other hand, the sunbursts of broken lines highlight the successful contact points between field and document data. The two-letter two-digit labels of our coding system (for example, AC01, KE01) identify those who are coded persons

from the top end of field genealogies. Bursting down from each, the symbol represents the array and number of descendants that field data provide. These nine sunbursts add up to over 500 of our coded population of around 1,200, and that figure does not include a fair number more who could be traced through females.

A few of those contact individuals now show up on Chart 2 (field data) which presents a selection of recalled progenitors. By *progenitor* we mean the farthest-back person that informants could recall. It is a *selection* because it would take many charts, with overlapping memberships, to display the whole complexity of the field data. As it is, the chart omits the three most recent generations. Also omitted are spouses—the inclusion of females would certainly destroy the neatness, but their omission is regrettable, especially with a bilateral kinship system. There is therefore an unwarranted patrilineal bias in these simplified charts, although in fact we were able to obtain less information on the women the farther back in time we went—from both sources, informants and documents.

Three types of results are shown, based on degree of success in connecting with documentary data. Type 1 depicts the greatest success: two of the recalled progenitors who were not only found in archival records but found to be directly descended from Crane. These are two of the sunbursts from Chart 1, AC01 (Gičiyamow) and KE01 (Kakagiwaš). There were eight cases of this radically satisfying type. The case of



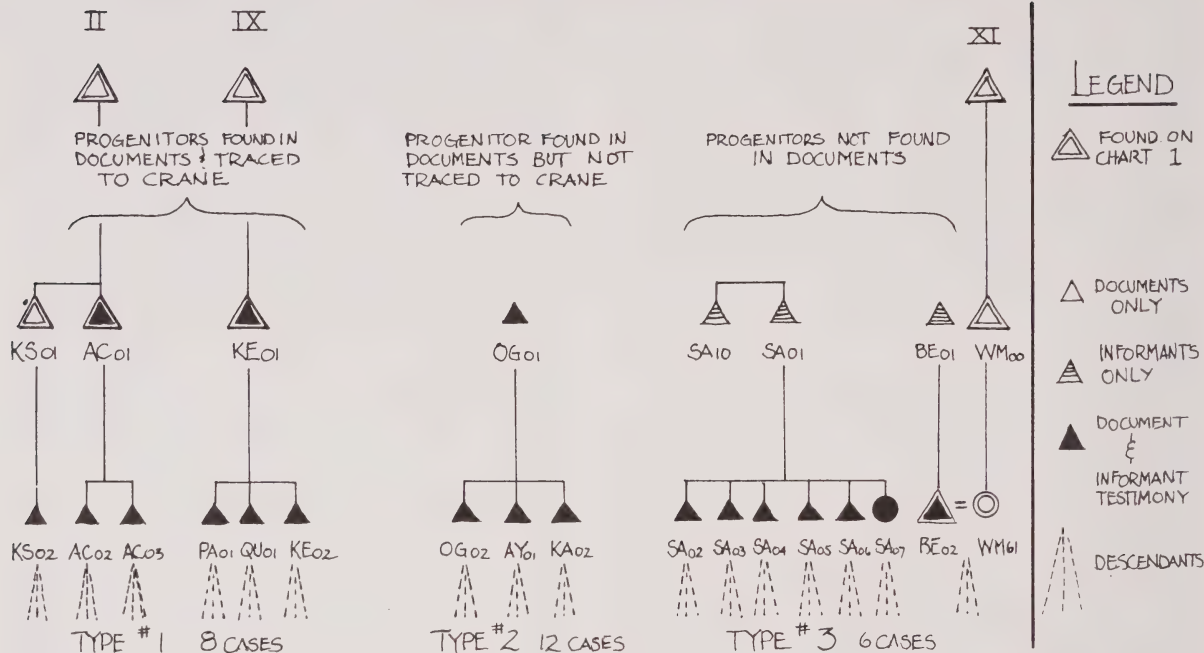
- I AQUACEE \ OLD MAN
- II E CONITE
- III WAMESTAG OOSHISH \ LITTLE ENGLISHMAN
- IV TUPPEEWIN
- V SHINIKINI \ MacDonald
- VI HOOKIMAW
- VII OSKINIKI \ CROOKED NECK
- VIII PICKEKAQUAN
- IX MITAWENENNE \ TRADER
- X SHABWASH
- XI SHEWAYKISHICK

CHART 1 DOCUMENTARY DATA

ELEVEN SONS OF CRANE 1813-1828:
THE FIRST OJICAKONSAK

LEGEND DECEASED PRIOR TO 1827 NUMBER OF DESCENDANTS THAT FIELD DATA PROVIDE
+ DATE OF DEATH

CHART 2 FIELD DATA GENEALOGICAL TRAILS TOWARD THE ANCESTORS



KE01 is the most clearcut, as all names and their relationships were provided by informants and then confirmed by documents. For KS01 and AC01 there is more subtle confirmation. Informants named AC01 as father of two of their recent elders (AC02, 03), but they wavered on the question whether a third elder, KS02, had been a full sibling to the other two. The post records have AC01 and his two sons' names, but do not show him as their father. Thus the two sets of data dovetail but do not overlap. Now, in the absence of documentary confirmation of the relationship, the conclusion that we really have found our informants' progenitor Gičiyamow (AC01) in the documents does not rely on just the name. The records have also a brother to AC01, shown as KS01, who—for reasons too involved to go into here—has to be the father of KS02, thus supporting the memory that KS02 and AC02 and AC03 were “closely related, like brothers”. (Parallel cousins are equated with siblings in the kinship system of the Northern Ojibwa.) This is a case of combining field data with documentary to yield a conclusion that could not be drawn from either kind alone.

In Type 2, all four men whose names and relationships had been given by informants were located in the documents. But here the progenitor, OG01 (Mišiton), is not yet connected to any of the Crane lines of Chart 1, though the probability is high that he is one of those shown as dead-ends down from Crane. There are twelve cases of this type, where we locate the progenitor but lack the Crane connection.

Type 3 is at the other extreme—of frustration. First, take SA01 (Wabogwakan), a very important person and father of several known lines of the coded population. His sons' names appear in the records, at the proper period and in the proper company. He even had a brother named by informants who shows up—but doesn't help (SA10). But Wabogwakan eludes positive identification, even though the word *wabogwakan* can be translated as “white beard” or better “white chin”, and there is in the documents an individual recorded as “White Chin”—a son of a son of Crane and with a number of sons himself. However, the sons in the records do not correspond to those reported by informants, and we therefore refrain from equating the two White Chins without further positive evidence. Of this type of field data there are but six cases remaining.

The other example of Type 3 (at the far right) is the father of BE02, who also appeared on Chart 1. The father's name, as given by informants, means (according to them) “I eat alone”. But for him there is no recognizable presence in the records—just a few tempting tidbits. But then we are happy to see that BE02's wife is provided, when he was called by the trader “Rattle Skin's son-in-law” (HBCA B220/d/38a: fol. 6). So their progeny and the succeeding bursts of descendants can be traced to Crane through her. (The possibility remains, of course, that he had several wives. In fact, he probably did, as he was the great leader of the late 1800s, Giči David or Amačiwepenesi, and we still hope to discover whether he

was indeed only a Crane-in-law after all.) These progenitors of Type 3 also may be among the dead-ends of Chart 1.

Putting Charts 1 and 2 together, one above the other so to speak, we have Chart 3 (documentary and field data combined). At the top we have a selection of data from archives, comprising three of the original eleven Ojčakonsak (IX, X, XI)—those who hunted at North Caribou Lake in 1828. Then, at the bottom we have a little bit of the sunburst detail from field data, comprising those whose descent has been traced from Sewekizik (XI). This shows one more generation downward than on Chart 2, but still stops short of the generations alive during field work. (Only the individual away down at the left side, WM39, brings the record down to the present. You may recognize the successful Ojibwa artist Saul Williams, whose paintings have been on display at the ROM and elsewhere. Some of them are in the permanent collections of the Department of Ethnology. See also M.B. Black 1970.)

In the middle era, roughly from 1840 to 1910, one finds the contact points of the two data sources. Individuals found in both are shown in solid black. On Chart 3 lack of space limits us to XI's descendants, but Chart 2 showed successful connections for IX also, right down to the present. On the other hand, the third member of this 1828 hunting group, X, the brother

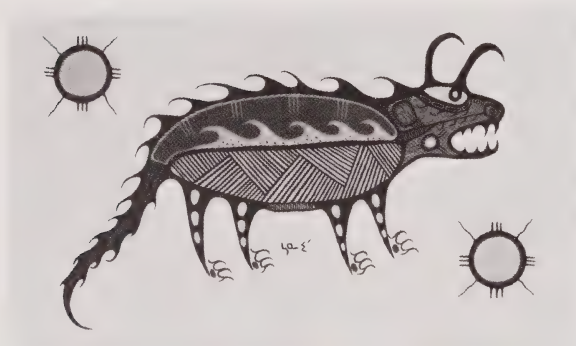
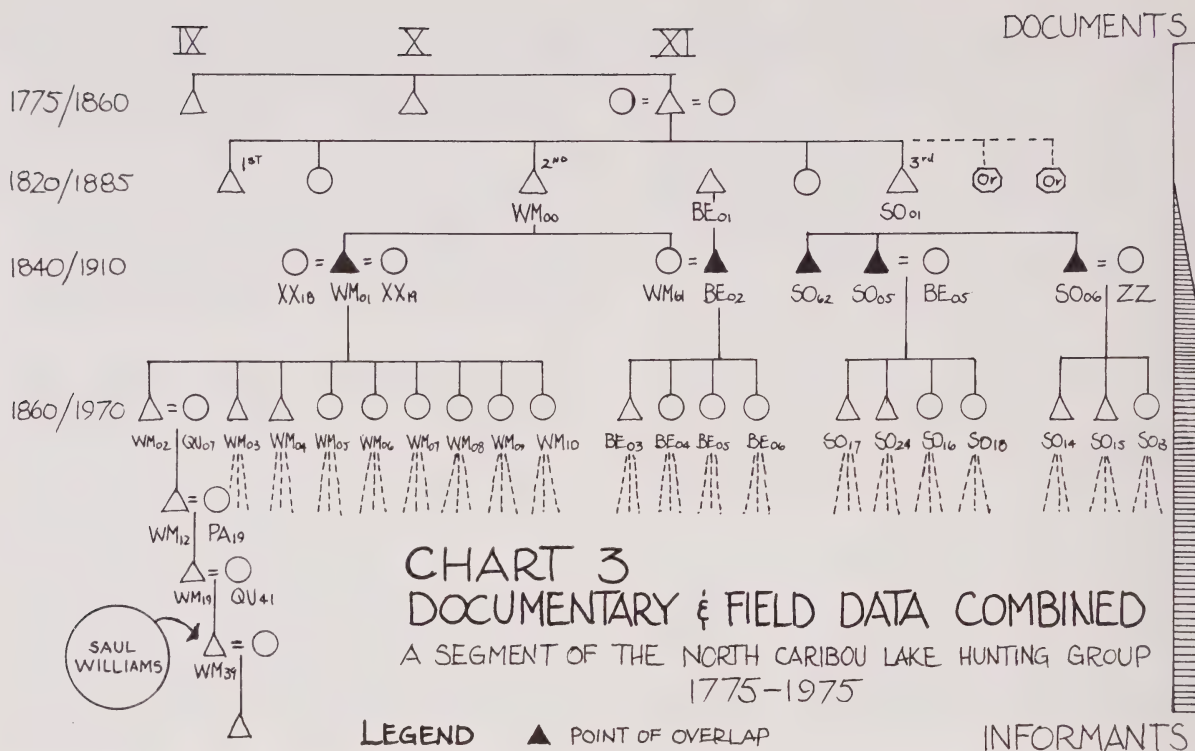
Shabwash, reaches a quick dead-end. His descendants go nowhere that we can trace, because his three sons were never named in traders' records (they were recorded only as sons Nos. 1, 2, and 3 of Shabwash). Yet there is little doubt they left families, as they are listed among trappers through 1864.

This whole jigsaw puzzle will no doubt always be one with missing pieces, and the holes that remain in the picture will invite theories largely incapable of verification. Yet for its purpose we think it will be of considerable value, even in its present incomplete state.

The larger purposes of such a "name-game" can now be outlined. The value of the genealogical results is not merely that they show how many Weagamow Lake people sprang from a certain family in the past, but that they enable us to determine kin relationships and alignments of this community to a considerable depth. The reason why anthropologists collect genealogies in the field is not usually to assemble family trees of ancestors, as has been done here, but to learn the relationship system among all the members of a community. Many lines of ethnological enquiry are aided by genealogical data. Physical anthropologists, too, frequently require this type of information in their studies of human biological phenomena. In addition to their implications for the ethnohistory of the area, the



Man and Snake by Saul Williams, a young artist of Weagamow Lake who signs his work in Cree syllabics. ROM Collections, Department of Ethnology.



Missapisheew, a great lynx who lived under the waters, painted by Weagamow Lake artist Saul Williams. ROM Collections, Department of Ethnology.

results may also be significant for archaeological reconstructions of hunting-gathering societies, and they should illuminate some of the advantages of combining field and documentary data (see E.S. Rogers and M.B. Rogers 1978).

Results stemming from the group-name data also have independent uses. For one thing, they represent a sort of test of how far an investigator can rely on a name alone to define the boundaries of a "group", and whether such a name should be taken as a *totem* or

designation of certain types of kin group without checking its actual origin. With the precautions indicated by these enquiries, the information about "the Cranes" gleaned from this puzzle-working will help to further our knowledge both of the origin and the development and of the structure and functions of Indian groups in northern Ontario during this period, and will also have application to hunting-gathering societies elsewhere in the world. Our data from both genealogical and group-organization categories are now being prepared for computer programs designed to perform kinship-system and demographic/residence analyses.

A study of the culture and history of the Weagamow Lake people has significance, beyond its purely descriptive value, in several realms. For example, among the areas of study in which it can provide illumination are: environmental and ecological adaptation, including material culture (see E.S. Rogers and M.B. Black 1976); processes of change under contact with Euro-Canadian society; group structure and movements of Ojibwa and Cree bands of northern Ontario; "hunting-gathering" societies in general (those lacking agriculture); and "band societies" (those with relatively simple political organization, suited to the mobility and dispersal over large areas of land that are required to survive in country like the Canadian Subarctic).

The puzzle of the Crane Indians is a small but necessary step towards understanding the culture, ecology, and history of the peoples of the Subarctic.

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This report, which was presented at the First Annual ROM Research Colloquium, 15 and 16 March 1979, is based on research carried out jointly by Dr. Edward S. Rogers and Dr. Mary Black Rogers of the Department of Ethnology. Ed Rogers, shown with local interpreter Elijah Beardy, has been Curator of Ethnology and Professor of Anthropology at the University of Toronto and McMaster University during the past twenty years. Mary Black, shown with Mrs. Mamie Quequish (her adopted mother) at Weagamow Lake, came from UCLA to fill the post of field ethnologist with the Round Lake restudy and has remained affiliated as Research Associate.

The Department of Ethnology in conducting research during the past two decades among the Indians of northern Ontario—especially those of Weagamow Lake—has been aided by many organizations and individuals. The project was initially conceived by Kenneth E. Kidd and was supported during the first year (1958-59) by the *Globe and Mail*. The Agricultural Rehabilitation Development Association (ARDA) made possible a two-year restudy (1968-70). The Ontario Department of Lands and Forests (now the Ministry of Natural Resources) has assisted in many ways. We are indebted to the Anglican Diocese of Keewatin in Kenora (Miss Margaret Etter), the Hudson's Bay Company Archives in Winnipeg (Mrs. Shirlee Ann Smith), and members of the Department of Indian Affairs in Ottawa for making available archival materials. Finally, without the cooperation and hospitality of the Indian people of Weagamow Lake, none of this research could have been possible at all.



Below: Fifteenth-century French illumination from Renaud de Montauban. The sharp points, slim lines, and contrasting broad shoulders are typical of Franco-Burgundian court fashions of the period. Bibliothèque de l'Arsenal, Paris.





Right: Portrait of a Man in a Turban, attributed to Rogier van der Weyden, c. 1400–1464, illustrating the chaperon, a padded roll fixed to a close-fitted coif. The Metropolitan Museum of Art, The Jules S. Bache Collection, 1949.



Men's Fashionable Costume

The Male Peacock

Mary Holford

IN THE SPRING OF 1978 the Textile Endowment Fund Committee initiated *The Gentle Domestic Arts*, a series of popular public lectures, each relating to some aspect of textiles. The venture was so successful that a second series was planned for the spring and fall of 1979, this one specializing in various aspects of costume. The final talk of the 1979 series, entitled *The Male Peacock* and given by the Toronto tailor Mr. Morris Gay and the author, presented an overview of men's fashionable costume.

From time to time men's fashions have been eclipsed by those of women, but this fact in no way diminishes the importance of men's styles in the history of costume. There has always been, and presumably will continue to be, a logical development in the styles of men's fashionable clothing, and although the same may be said of women's wear, the logical development there is less easy to discern.

Originally cloth was the most important aspect of dress, and to clothe oneself was to put on cloths. People of rank and wealth wore their clothes as a symbol of status. The clothes were made of expensive materials such as silk, richly patterned or embroidered and often embellished with gold and silver thread. Sumptuous garments were the prerogative of the ruling classes, and the more yardage they wore, the more their status was enhanced.

At first the nobility dressed to impress their peers, for the admiration and envy of the lower orders were of relatively little importance to them. Kings, princes, and dukes vied with one another, not only in the splendour of their own

attire but also in that of their households and retinues. By the late 14th century noticeable changes had already begun to take place, not only in society but in clothes. The rise of a vigorous and influential middle class put strong pressure on those who held, or thought they held, the exclusive right to dress ostentatiously. Sumptuary laws were apparently of little avail and the only effective way for the upper classes to identify themselves was to devise new styles of dress. In this way fashion was set gradually in motion. Innovations appeared in various shapes, and tailoring, as we know it, began to place more emphasis on fit and form. The tailor, or *tailleur*, was a cutter, and it is probably in connection with this specialized craft that the French word *la taille* implies the stature of the body.

Flamboyant examples of men's styles in medieval France are illustrated in the *Très Riches Heures du Duc de Berry*, which was probably commissioned at about the time of Joan of Arc's birth (1412), when French court fashions (like those of the Italian courts) were noted for their abundant use of rich cloth. A fashionable headdress was the hood *chaperon*, a hooded cape worn with the face opening on top of the head and the bulk of the material wound like a turban. Later the *chaperon* became a large padded roll set on a close-fitted coif. Hoods worn today with academic gowns are a throwback to the Middle Ages.

The most colourful and distinctive style of the latter half of the 15th century was that worn at the court of Burgundy. Sometimes described as Gothic because of its long points and slender vertical lines, the style

was exemplified by women's steeple headdresses and by men's needle-pointed shoes and extremely tight hose. From about 1360 to 1470 the dukes of Burgundy ranked as the most influential rulers in Europe, and their territories then included much of present-day Holland and Belgium, where the finest wool cloth was woven. It is possible that the properties of the Flemish cloth permitted the development of the tightly fitted garments worn at the Burgundian court. In England the looser flowing style in the Italian tradition continued until the death of Henry VIII (1547). Henry was among the last of the Renaissance peacocks and his square-set figure was amplified by padded and jewel-studded clothing. Thereafter a slimmer, more rigid silhouette became fashionable.

Suits of armour are a useful source of reference, for they illustrate in practical terms the early phases of three-dimensional clothing construction. The metal cuirass, pieced and shaped to the figure, was a sort of prototype or pattern for similar garments made of cloth. At first, padded jackets worn beneath armour and cut to the same shape were made by linen armourers. When these jackets had been adapted to civilian use, the linen armourers eventually became members of the tailoring guilds. The cuirass of steel was usually made with a protruding bulge in front—designed to deflect direct blows in combat. In the late 16th and early 17th centuries, however, it appeared in grotesque form on men's doublets and was fashionably known as the "peascod belly".

The second quarter of the 17th century has been



Dress of the Belgian nobility, c. 1581. The figure on the right has a slight peascod curve on the front of his padded doublet. Nineteenth-century reproduction. ROM Collections.



Left: Portrait of a Gentleman by Gerard Terborch, 1660–70. Petticoat breeches with gathered ruffles called canons at the knees, and a short vest. Reproduced by courtesy of the Trustees, The National Gallery, London.

Right: French costume for men, 1629, by Abraham Bosse. This fashionable figure wears a lovelock, lace trimmings, and soft leather boots. By courtesy of the Victoria and Albert Museum.

called the age of “lovelocks, lace and leather”. The fashionable cavalier wore shoulder-length hair with one longer curl at the side—the lovelock. Since this coiffure was inconvenient with high Elizabethan ruffs and collars, these began to droop and spread out over the shoulder. Lace, for which vast fortunes were paid, was used as lavish trimming. Leather jackets and wide-topped bucket boots gave a masculine solidity to the general effect. In the late 1650s a fanciful confection for men appeared. It consisted of very wide knee-breeches, some of which were gathered in at the knees and worn with a skirtlike overfold. They were appropriately called petticoat breeches and were usually worn with a bolero-type vest, which revealed an expanse of bloused shirt.

A painting by Gerard Terborch, done in the 1660s, shows a young man dressed in black petticoat breeches, broad-brimmed hat, and shoes with wide bows. Below his knees are tied a pair of deep ruffles called canons. These took the place of the former lace-edged boot hose. Mr. Morris Gay remarked, “You can’t go wrong with a little black suit.” But with this kind you evidently could go wrong. In 1661 a friend of Samuel Pepys told him that he “put both his legs through one of the knees of his breeches and went so, all day”. No wonder, since each knee opening was sometimes as much as a metre and a half in circum-

ference. This extraordinary costume was undoubtedly influenced by the “Eastern Taste” which was so all-pervading at the time and which was often given a highly imaginative interpretation by Western European society.

During the 17th century, trade with the East opened up a world of exotic designs and unknown techniques, which inevitably had a profound effect on fashion. The petticoat breeches seem to have evolved as a shortened version of baggy Turkish trousers. Needless to say, they had a limited appeal and were outmoded within twenty years. Some gentlemen preferred a loose gown or tunic which was tied with a sash and worn over a knee-length vest and knee-breeches. In 1667 Pepys recorded that he went “to a India shop and there bought a gown and Shash which cost me 26s”.

By the time William of Orange arrived in England (1688), men’s clothes had assumed more graceful proportions. Coats with expanding skirts and sleeve cuffs now came into prominence. Knee-breeches were reduced in volume, and vests at this stage were actually sleeved undercoats which could be worn informally as decorative house-jackets when the coat was removed.

Wide-brimmed hats, festooned with feathers, were slightly cocked up at the edges, anticipating the three-cornered hat of the following century. White neckcloths were tied and folded in various ways for deco-

rative effect and like the ruffles of shirt sleeves were sometimes trimmed with lace.

In the 18th century men's clothes underwent progressive changes, some of which are best illustrated by military uniforms of the period. Although there had previously been some semblance of uniformity in military clothes, it was not until the last third of the 17th century that military dress began to be regulated. Uniforms were worn both for protection and for identification and they were designed to facilitate the carrying of arms and equipment in the field. Most practical aspects of military dress served also as a distinctive identification of regiment or rank—hence the elaboration of certain otherwise modest trimmings and the magnificent colours of the military male peacock.

Many of the practical influences on men's styles, if not of military, were of rural origin, particularly in England where the outdoor sporting life was popular and country gentlemen were influential members of society. They wore their well-made sturdy clothes with an assurance that must have impressed the men-about-town, for the styles of country clothing were duly adapted to fashionable city life.

Two of the styles that have come to us from the 18th century are the turned-down flat collar (later with lapels) and the double-breasted suit coat. The first, probably derived from a countryman's coat or shirt, was the distinguishing feature of the 18th-century frock-coat, commonly worn in the country by both labourers and squires and informally by the military.

Large collars were particularly popular and useful on overcoats. One mid-18th-century overcoat in the Museum's collections is made of red wool and has a wide flat collar which can be turned up and buttoned to cover half the face as protection against the cold. This coat is double-breasted and can be fastened on the right or the left side. The vents at the back and the sides were practical for horseback riding.

For military activities, when coats like this became too confining, the front and back corners of the skirts were turned up and buttoned at the hips. In the same way the overlapping flaps on the chest could be thrown open and turned back from the centre front en revers. The revers were then fastened down by the row of buttons on each side of the coat. As time went on, the exposed linings or facings were made of different colours and became a distinguishing mark of regiment or rank. Similar colours were used as facings on turned-up sleeve cuffs, which originally could be worn turned down for added warmth.

Eventually the skirt fronts were simply removed from both military and civilian coats. Some coats, usually single-breasted, were cut away in a sloping line from the waist. Others, usually double-breasted, were cut back in a horizontal line across the waist. During the 19th century these two styles became progressively more formal. The former cut is still seen in today's morning coat, and the latter has endured in today's evening tail coats.

During the last two decades of the 18th century and

French fashion plate depicting a gentleman's morning gown, November 1833. ROM Collections. Gift of Warren K. Cook Limited.



the early years of the 19th, there was a wave of Anglomania in France and the style worn by the "milords anglais" was considered the ultimate apparel in fashionable circles. The sober dark-coloured cloth coats and neutral breeches made a dramatic contrast to the white linen neckwear. The deceptive simplicity of a well-cut cloth suit was very sophisticated, and the tenets of good taste in men's dress decreed that nothing was to be too noticeable—except the impeccable whiteness of their linen. Although the dandies preferred colourful patterned waistcoats, the conservatively dressed gentlemen wore black suits which could if well tailored be equally impressive.

In the Museum's collection there is an early 19th-century suit which belonged to Thomas Coutts, the English banker who had as his clients George III, the Duke of Kent, and Prime Minister William Pitt. The coat of black cloth is double-breasted with a square cut-away front. It has the characteristic M-notch—a device used to facilitate the turn of the large collars then in vogue. Thomas Coutts continued to wear this style after it had ceased to be high fashion.

George IV became king of England in 1820. As Prince Regent he had already shown great interest in well-tailored clothes, although his corpulent figure was a challenge to the best of tailors. He himself is said to have devised one or two sartorial improvements to alleviate the visible strain on his clothes. In all probability he was given advice by his friend George "Beau" Brummell (1778–1840). Brummell, the son of a

steward, became the recognized arbiter of taste in men's dress at the beginning of the 19th century.

From 1820 until 1918 the changes in men's dress are well and fully illustrated in the Museum's collection of fashion plates. Some of these plates are part of the Emily Elliott Collection, the gift of Mrs. Ernest Redelmeier. Others are in a large collection of men's fashion plates, the gift of Warren K. Cook Limited. The plates consist of hand-painted lithographs and half-tone photoengraved prints. Most are French, but a number of the earlier ones are English. Some appeared in monthly publications such as *Le Tailleur Journal des Quatres Saisons*. Others were published semi-annually, for example, in the publication of the Société Philanthropique des Maîtres Tailleurs de Paris, which appeared each March and September. These fashion plates show the variety of garments made by men's tailors during the 19th century. They also include women's riding habits, and during the last two decades of the century women's tailor-made street costumes. The plates are a useful documentation because they reflect the customs, deportment, and self-image of well-dressed society.

The frock-coat and top hat came to be accepted as correct everyday wear for gentlemen. The 19th-century frock-coat was skirted, with a straight front opening, either single- or double-breasted. Collars were cut according to contemporary fashion, except for those of the clergy and the military. By the 1830s the frock-coat was noticeably more prevalent in

Miniature portrait of the Earl of Dundas, c. 1793. The turned-back edges of his double-breasted coat are an early form of lapel. ROM Collections, European Department.





Right: French fashion plate, c. 1780. The gentleman's dressing gown of painted or printed cotton reflects the Eastern influence on European fashions. ROM Collections.

Left: Man's coat and knee-breeches of dark red wool with pale blue corded silk waistcoat, both trimmed with gilt braid. English 1750-55. ROM Collections.



fashion than coats with cut-away skirts. One reason for this was that horseback riding was no longer an essential means of transportation, for by now there were efficient passenger coach systems and the railway was newly established.

Improved tailoring also played an important part in the success of the frock-coat. From the second quarter of the century this art was becoming a science. Slowly, and in some cases rather reluctantly, tailors began to use numbered rather than notched tape measures for more complex fitting and to draft patterns with mathematical precision. Until then, tailors had relied mainly on their own visual assessment of proportion and line. There were advantages to both systems, but the scientific method prepared the way for eventual mass production. We are told that Prince Albert, by his example, set the seal of respectability on the frock-coat, which survived into the first quarter of the present century.

Trousers were garments of ancient origin in Europe and had long been associated with labourers and country folk. During the second decade of the 19th century they began to replace knee-breeches as fashion-

able day wear. Their rise to fashion is attributed to the social upheavals unleashed by the French Revolution and to the subsequent military influence. Knee-breeches gave way to tightly fitted ankle-length pantaloons, and by the late 1840s these had been replaced by trousers, which were worn for all but the most formal occasions.

Many formal trousers still have a woven stripe or braid down the side of the legs. This detail derives from the military use of overalls, which were buttoned down the side of the legs. Originally worn over knee-breeches, these protective coverings eventually became closed trousers, on which the woven or braid stripe replaced the line of buttons.

Through the first half of the 19th century the most consistently eye-catching garment of a gentleman's wardrobe was the waistcoat, but the one that required the most meticulous attention was the cravat, stock, or tie. Each decade had its distinctive shape of neckline, collar, and lapels, and accordingly there was a great variety of neckties: wide bows like butterflies, narrow string ties, and folded ties such as the later Octagon and Ascot and the subsequent knotted four-in-hand.

Men's clothing from the mid-19th century, and indeed until the mid-20th century, has been condemned as drab. But the lack of bright colours was compensated by an increased variety of styles, and a great deal more comfort in fit. In addition to primary material in museum collections, early photographs and daguerreotypes, which could be merciless to both the sitter and his tailor, often confirm the superb tailoring seen in contemporary fashion plates.

Until about 1870 tailor-made clothes were usually entirely hand-sewn and the fact that one could not notice the details of the workmanship was indicative of its excellence. The other factor in good tailoring was, of course, the quality of the cloth.

After the death of Prince Albert in 1861, the Prince of Wales (Edward VII) acquired the reputation of a fashion leader. His jaunty and prosperous air did much to influence men's styles in the later 19th century.

From the 1850s on, various new styles of menswear were introduced as fashion. Among these was the easy-fitting lounge jacket. It was worn at first informally in the country but gradually it insinuated itself into urban life and by about 1870 it had become acceptable day wear for businessmen. In 1888 the same coat appeared in another guise, namely, the American tuxedo or dinner jacket. At that time it was intended to be worn only at evening functions at which ladies were not present. Another innovation which appeared in the mid-19th century was the three-piece matching suit, which was sometimes all white for summer wear. Styles of overcoats multiplied—the semi-fitted Chesterfield with numerous flapped pockets, the dashing cape-sleeved Inverness, and several varieties of short

coats such as the *paletot* (a French rendition of the word pilot-coat).

Sporting jackets such as the pleated and belted Norfolk, usually worn with knee-breeches, were popular for the shooting season. At the same time a steadily increasing variety of sportswear reflected the widening range of recreational activities among polite society. At the end of the century there was a great rage for bicycling. This was soon followed among the more affluent members of society by the pastime of motoring, which required goggles, dust coats, and flat caps.

From the middle of the 19th century, innovations in trousers appeared and they continued to come and go as fashion. One style has endured—the sturdy simple work trousers of heavy cotton which Levi Strauss began to manufacture at this time and for which his name is now immortalized. By the late 1890s trouser cuffs had been introduced and the trouser press had made creased trousers available to all. This slenderizing fashion was endorsed by the Prince of Wales (Edward VII).

During the 19th century white shirts were generally worn—the safest mark of respectability. But some coloured shirts appeared during the 1840s, correctly worn with a white collar.

Just as the three-cornered hat belonged to the 18th century, the top hat belonged to the 19th, and details of its shape varied from decade to decade. Informal hats and caps remained popular for country wear and sportswear. The late 19th century witnessed an outburst of new styles such as the straw boater, the bowler, and the Homburg. The last two owed their popularity to the Prince of Wales (Edward VII) and became part of the gentleman's city wardrobe.

Since English men's styles were paramount



Left: Miniature portrait on ivory, 1807. The double-breasted coat with high turned collar and M-notch is similar to one in the ROM Collections which belonged to Thomas Coutts. Miniature lent to the ROM European Department by Mrs. F.F. Dalley.

Right: Fashion plate of three English dandies, June 1831. ROM Collections. Gift of Warren K. Cook Limited.

Right: French fashion plate, September 1834. Great-coat with velvet facings, and baggy trousers known as Cossacks. ROM Collections. Gift of Warren K. Cook Limited.



throughout the 19th century, those of the French tailors resemble them closely. Two of the French fashion plates dated 1898-1900 reflect Gallic subtlety: one figure dressed in a lounge suit and a bowler hat wears the cross of the Legion of Honour; the other dressed in a top frock-coat wears the bar of the Legionnaire, as a Chevalier of the Legion of Honour. In this way the *Maîtres Tailleurs de Paris* let it be known that they were patronized by the most distinguished clientele.

During the 1920s and 1930s the Prince of Wales (Edward VIII) travelled extensively throughout the world and because of his great popularity became in effect one of Britain's foremost ambassadors and salesmen. Like his grandfather, Edward VII, he was well aware of the importance of his style of dress and probably did more than any other individual to promote the British menswear trades and related crafts. He appeared in plus fours, often made of the Glen Urquhart plaid to which he was very partial, and he wore colourful





Mary Holford is Assistant Curator of the Textile Department, ROM. Since joining the Museum staff in 1954 she has specialized in the field of fashion costume and accessories and relevant material. From 1961 to 1975 she was associated with the Textile Department as special lecturer on fashion costume and its history. A native of this city and a graduate of the University of Toronto, she is a founding member of the Costume Society of Ontario and a member of the Fashion Group Inc., Toronto. Subjects in which she is particularly interested are portraiture, architecture, modern history, and modern languages.

socks and pullovers of Fair Isle knitting. He broke many of the accepted Victorian rules of dress and in doing so reinfused colour and panache into men's wardrobes in the 20th century.

The Second World War made some contributions to men's civilian attire, but few of them could be likened to peacock plumes. Some remain popular today—for example, the Eisenhower jacket and dark sunglasses. The diversification of men's clothes continued during the 1950s, with outbursts of eccentricity among the young. Some were of a retrospective nature (the clothes of the Teddy boys in Britain), and others were influenced by the styles of the underworld (the clothes of the beatniks in the United States). These outbursts were followed by blue jeans and the unisex look, which gave rise to a universal dress for any and every occasion. Yet some celebrities, notably Liberace, have managed to retain the old-world glitter of the male peacock. Today there still remain unmistakable traces of earlier traditions in such details as buttons, lapels, and vents. Even the ubiquitous turtleneck sweater gives the impression of the early 19th-century stock, especially when complemented by hairstyles reminiscent of the period.

No matter how often fashions are revitalized and repeated, each interpretation differs from the last as technology and social and economic conditions change. These differences, though they may sometimes seem insignificant, are, after all, an indication of the male peacock's life and times. "Manners makyth man," but so we are told do clothes.

Opposite page, bottom: English fashion plate, 1848–49.
ROM Collections. Gift of Warren K. Cook Limited.

Right: A colourful example of modern military dress, 1976.
Reproduced by kind permission of Colonel J.M. Lowndes, C.D., Q.C.



Recent Publications

Morphology of the Basisphenoid Pits and Related Structures of the Bat *Otomops martiensseni* (Chiroptera: Molossidae), ROM Life Sciences Contribution 119, *Dario Valdivieso, R. L. Peterson, and J. R. Tamsitt*, 20 pp., illustrated, \$1.50 paper

The Ordovician Trilobite *Pseudogygites Kobayashi* in Eastern and Arctic North America, ROM Life Sciences Contribution 120, *Rolf Ludvigsen*, 44 pp., illustrated, \$3.00 paper

A Protorothyridid Captorhinomorph Reptile from the Lower Permian of Oklahoma, ROM Life Sciences Contribution 121, *Robert R. Reisz*, 20 pp., illustrated \$1.50 paper

Evolution of Archeopyle and Tabulation in Rhaetogonyaulacinean Dinoflagellate Cysts, ROM Life Sciences Miscellaneous Publication, *Gunter Dörhöfer and Edward H. Davies*, 88 pp., illustrated, \$5.50 paper

A Systematic Illustrated Guide to Fossil Organic-walled Dinoflagellate Genera, ROM Life Sciences Miscellaneous Publication, *Darrah Artzner, Edward H. Davies, Gunter Dörhöfer, Armando Fasola, Geoffrey Norris, and Silvana Poplawski*, 120 pp., illustrated, \$6.00 paper

The Great Lakes, ROM Encounter Series, *Walter M. Tovell*, 24 pp., illustrated, \$2.25 paper; school edition 24 pp., illustrated, \$2.25 paper
This book explores the formation of the Great Lakes and the physical processes that control fluctuations in lake levels. Shore erosion and sedimentation are discussed and certain aspects of pollution explained. Ex-

cellent maps, diagrams, and photographs accompany the text.

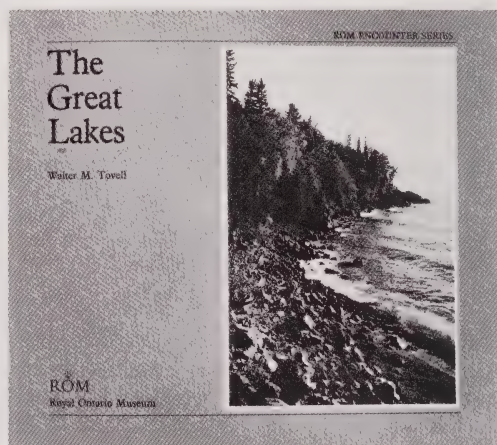
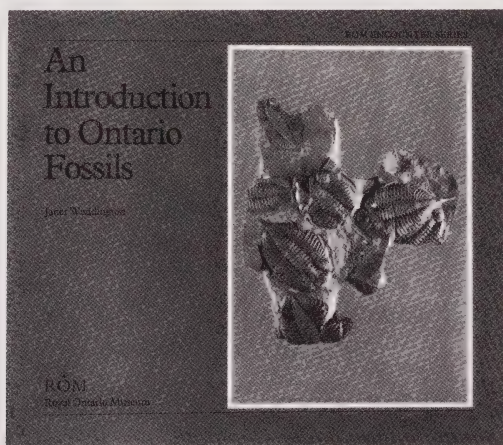
An Introduction to Ontario Fossils, ROM Encounter Series, *Janet Waddington*, 28 pp., illustrated, \$2.25 paper; school edition 28 pp., illustrated, \$2.25 paper

This publication provides an insight into Ontario's fascinating past and the way history can be read in the rocks. It is well and generously illustrated and should not only stimulate interest in Ontario fossils but assist in the identification of some of them.

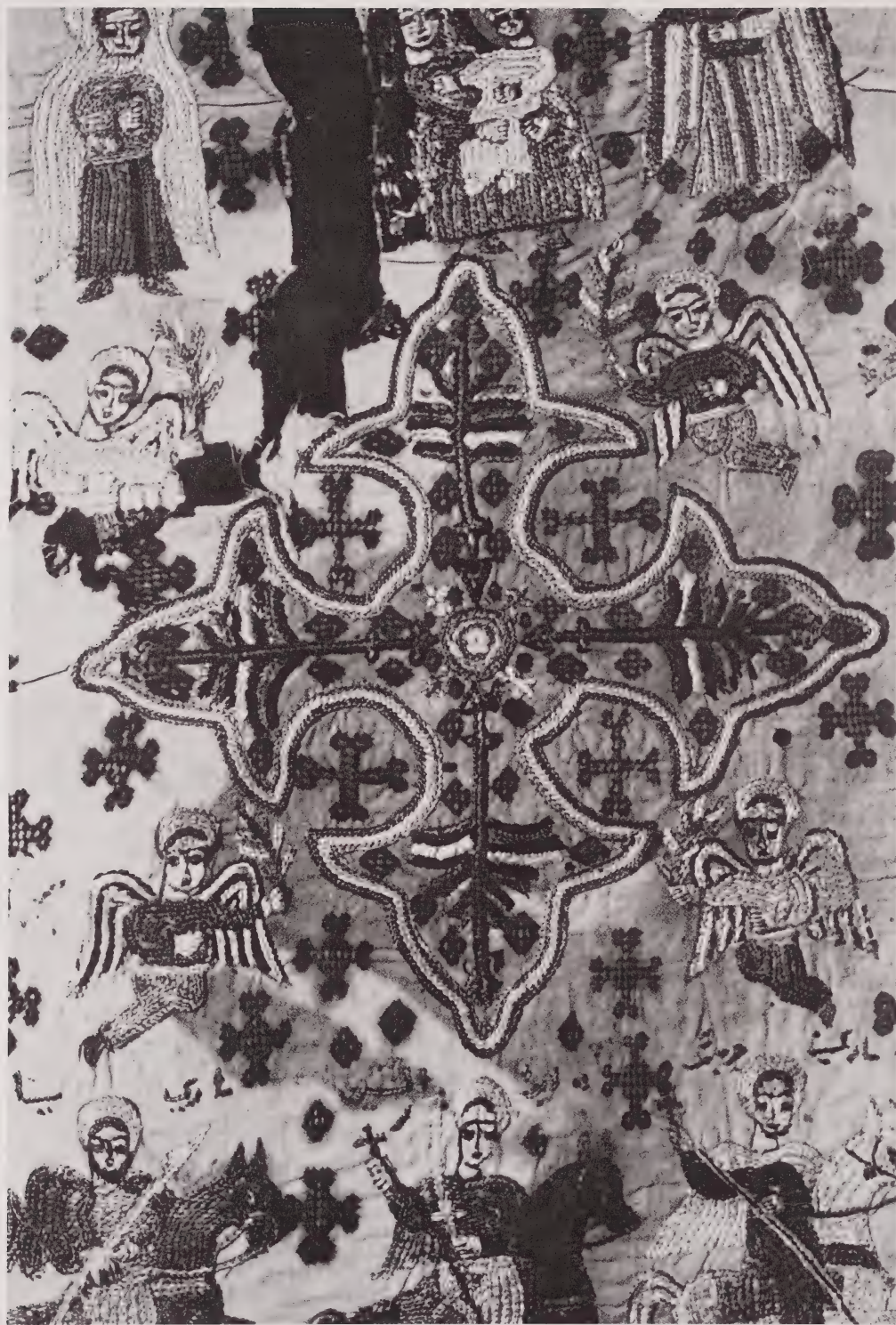
Edu-Colour Book 705: Tutankhamun, ROM, text by *N.B. Millet*, drawings by *Anker Odum*, 16 pp., \$1.25 paper
Sixteen large, finely detailed drawings of some of the treasures from the tomb of Tutankhamun for children to colour. Concise captions accompany each drawing and the short introduction at the front of the book contains useful background information about Tutankhamun and his tomb. Other Edu-Colour Books in the series: 701 Dinosaurs, 702 Insects, 703 Egypt, and 704 Native Peoples of North America.

Roman Curriculum Materials, ROM, *Florence Silver*, illustrated, \$10.00 boxed

A package filled with curriculum materials designed to encourage students in school-based study groups to become involved with the ROM's renovation and expansion. The kit, which is based on the collections in the ROM's Greek and Roman galleries, consists of a number of information sheets that introduce various aspects of ancient Roman life. Each information sheet also contains helpful curriculum and fund-raising ideas. Also included in the package are a poster, information on planning a teaching unit on ancient Rome, and a resource list.



Royal Ontario Museum
29th Annual Report
July 1978 – June 1979



Detail of embroidered child's shirt, cotton with silk embroidery and metal strips. Egypt, Coptic, 12th to 13th century. Total length 54 cm, width 46 cm. One of 1,183 items from the Michel E. Abemayor Collection given by Messrs. Albert and Federico Friedberg in memory of Dr. Veronika Gervers, Associate Curator, Textile Department, 1968-79.

Report of the Board of Trustees of the Royal Ontario Museum

To Her Honour, the Lieutenant Governor-in-Council:

Although, during the year under review, the Museum was subjected to a spate of unprecedented publicity in the media, it has continued to serve the public resourcefully and well, a fact reflected in the report of the Director to the Board of Trustees.

The Museum has not been exempt from the budgetary restraints imposed upon all public institutions, and these have seriously affected our day-to-day activities. In addition, the ravages of inflation have caused us to postpone some features of our very exciting Renovation/Expansion Project. Nevertheless, construction of the new facilities is well under way.

These pressures, which found the Museum caught in the political crossfire between Government and Opposition, have quite naturally led to misunderstandings and frustrations within the Museum community, among our own members, and among the public at large. We have been able to continue a high level of service to the public primarily because of the devotion and sacrifice of many members of our staff, whose increases in remuneration and benefits have been well below the increase in the cost of living. Although there has been some staff erosion, we have thus far been able to avoid lay-offs, but we have been unable to fill several vacant senior positions. We cannot expect this situation to continue indefinitely.

It would seem appropriate to restate the basic principles which guide the Board in the execution of its mandate on behalf of the public:

The Board is vitally concerned with all aspects of the Museum, but most important of all, in its judgement, is the integrity of the Museum itself and its good name and reputation in the province and in the country.

While dealing with increasingly difficult financial problems and remaining fully aware of the importance of strict accountability in all phases of Museum activity, the Board takes the position that it should not be unduly preoccupied with fund-raising.

Being highly conscious of the delicate role it must play in the operation of the Museum, both as a matter of good practice and in conformity with the Museum Act, the Board endeavours to maintain and improve communication with the staff at all levels. At the invitation of the Director, the Chairman of the Board met twice during the year with the full staff of the Museum. While it does not intervene in day-to-day operations, the Board accepts full responsibility for all of the Museum's activities.

With respect to the Renovation/Expansion Project, the Board has established a firm policy of not undertaking any part of the work for which funds are not already assured. For this reason the Board was unable to approve the second and third phases, that is, the renovation of the main building and the construction of

the Terrace Galleries, until late September, when assurances were received from the provincial government that, as a result of the negotiations between the provincial and the federal governments, the "implied federal obligation" to the Museum would be assumed by the province. On 4 September 1979, in a prepared statement, the Minister of Culture & Recreation said, "I, as Minister, am taking the necessary steps to ensure that the Royal Ontario Museum will get the funds it needs to complete its three-phase programme on schedule." As a result of careful budgeting and all possible economies, we anticipate that the renovation of the main building and construction of the Terrace Galleries will be complete, and the main floor containing the Ming tomb open to the public, in 1982 as scheduled. It is, in our judgement, vitally important that the fabric of the Terrace Galleries building be completed.

The Board is absolutely committed not to authorize the expenditure of funds beyond the original budget of \$44,250,000, but as our Private Sector Fund-Raising Campaign progresses and we continue to seek further assistance from other sources, we expect to be able to take full advantage of the very necessary and unique new facilities.

In June the Chairman and Director appeared before the Public Accounts Committee of the Legislature to restate these basic principles under thorough questioning by the members of the committee.

I am particularly pleased to report that, having quite properly received from Dr. Cruise one full year's advice of the expiration of his contract as Director, the Board at its meeting in August unanimously offered him a further five-year appointment from 1 July 1980 to 30 June 1985, which he has accepted.

Unfortunately, we still have been unable to negotiate for the use of the Lillian Massey Building, in whole or in part. We remain convinced that this beautiful old building, so conveniently located right across the street from the Museum and connected with it by the subway, could be well used by the Museum, and that such use would be in the best interest of the people of this province. We hope that, with the cooperation of the two ministries involved, we may yet be able to rescue this building from possible commercial development and secure it for public and educational use.

On 30 June, the end of our fiscal year, Mr. Peter G. White of London, Alderman Reg Wheeler of Hamilton, Mrs. Ernest Redelmeier of Richmond Hill, and Mr. Jack Barrow and Mr. H. Donald Guthrie, Q.C., both of Toronto, all completed their active service as members of the Board. We thank them for their dedicated service to the Museum. We would express a particular word of appreciation to Mr. Guthrie, who was Vice-Chairman from 1976 to 1979 and Acting Chairman of the Board for six months while the office of Chairman remained vacant. Happily, all four have agreed to serve as

Honorary Trustees and will in that way continue to be involved in Museum activities.

Late in August we were particularly pleased to welcome the appointment of Mr. Maurice F. Anderson, Mr. John H. Devlin, and Mrs. J. J. Fitzpatrick, all of Toronto, and of Mr. Rodger E. Inglis, Q.C., of Hamilton, and the reappointment of Mr. Joe A. Whitmore of Uxbridge. Mr. Harold M. Turner Jr. of Toronto had earlier been elected by the members of the Museum to assume office on 1 July 1979.

As I reported a year ago, the Board made a submission in March 1978 recommending changes in the Royal Ontario Museum Act which would provide for the election of more members of the Board by members of the Museum, the election of some of its members by the Board itself, and the election of the Chairman by the Board from among its members. We still hope that this submission will receive favourable consideration at an early date. The delay in filling our recent vacancies, to which I alluded above, underlines the importance and urgency of these changes.

The Board is organized as a number of committees, with each member of the Board serving on two of them. Each committee meets regularly, and all play a vitally important role in the life of the Museum.

The heart of the academic side of the Museum is the Collections Committee, chaired by Mr. Gerald F. Levenston, M.B.E. This committee, which includes curatorial representation in addition to Board members and members of the Senior Management Team, carefully monitors all gifts and loans, maintaining and encouraging liaison with many generous individual donors and institutions both within Canada and elsewhere, to whom we are very grateful. At the same time, the committee jealously guards legitimacy and the maintenance of acceptable ethical standards.

We have a very strong Finance Committee, chaired by Mr. Ronald L. MacFeeters. This committee not only is concerned with our internal financial structure, which includes a multiplicity of very special trust funds, but also reviews the presentation of the annual budget submission to the Minister of Culture & Recreation, an increasingly difficult task in times of financial restraint. Our investments are looked after by a subcommittee of the Finance Committee, chaired by our former Chairman, Mr. G. D. deS. Wotherspoon, D.S.O., C.St.J., Q.C.

Our Personnel Committee, chaired by Mr. Ernest A. Du Vernet, Q.C., is concerned with such matters as staff relationships, accountability, and communication between all levels of staff within the Museum.

Our Communications Committee, chaired by Mr. David F. Quan, deals with matters concerning membership, publications, and development. This committee is now reviewing our whole membership structure with a view to establishing the equivalent of a ROM Foundation, which is long overdue and greatly needed.

A special committee of vital importance at this time

is our Project Control Group, concerned with our three-phase Renovation/Expansion Project: the building of the Curatorial Centre, the renovation of the main building, and the building of the Terrace Galleries. Mr. H. Donald Guthrie has been the Board's liaison with this group, which includes curatorial representatives, the Senior Management Team, a full-time staff member of the Ministry of Culture & Recreation, and our very able Project Director, Mr. Henry Graupner. At the end of 1979 Mr. Guthrie will be succeeded by Mr. Maurice F. Anderson.

Our Revenue Services Committee, chaired by Mrs. J. A. Rhind, is concerned with the shops, the cafeterias, and the ancillary services available to the public, all of which will have an increasing importance in our renovated and expanded premises.

We are greatly indebted to a number of volunteers who, while not members of the Board, have agreed to accept annual appointments as members of our Museum committees in order to make their special expertise available to us.

In January 1979, prior to his appointment as a Trustee, Mr. John H. Devlin became co-chairman with Mrs. K. L. Campbell of our Private Sector Fund-Raising Campaign, which has built up a total of over \$7 million in private support for our project—70 per cent of our campaign goal.

We also owe thanks to the Members' Volunteer Committee, chaired last year by Mrs. D. J. Sieniewicz, who has since been succeeded as president by Mrs. R. S. Montgomery.

In all of these activities, Mr. Richard M. Ivey, the Vice-Chairman of the Board, plays an invaluable role as counsellor and adviser.

We would like to record the unique service rendered to the Board and to the Museum by the Board Secretary, Mr. Frank J. Dunbar, who is known and respected throughout the Museum community in Canada and serves the Board and all of its committees with dedication and resourcefulness.

Finally, I wish to express appreciation for the cooperation and support both of The Honourable Reuben Baetz, Minister of Culture & Recreation, who has demonstrated his continuing personal interest in all phases of our activities, and of his Deputy-Minister, Dr. Douglas Wright, and the very conscientious and hard-working members of his ministry, with whom we work on a day-to-day basis.

We would thank you for your confidence and assure you that we continue to exercise the power given to us under the Royal Ontario Museum Act to the best of our ability.

On behalf of the Board of Trustees,

Sydney M. Hermant
Chairman

Toronto, Ontario
31 October 1979

Director's Report to the Board of Trustees

It is a distinct pleasure for me to report on the affairs of the Royal Ontario Museum for the year 1 July 1978 to 30 June 1979, in accordance with paragraph 6(c) of the Royal Ontario Museum Act.

During this past year financial stringencies prompted a close scrutiny of all our activities, including accounting procedures and audit controls. I am glad to report that, although some useful suggestions were forthcoming about the modernization of certain of the Museum's accounting procedures, our financial records were found to be in excellent shape. In the interest of economy it was decided that the annual report for 1978-79 would be greatly reduced in size and incorporated into the winter issue of *Rotunda*. I hasten to add, however, that a complete record of the activities of each department has been compiled. This record is being made available in the Museum library and will also be filed in our archives, where it will form an integral part of the history of the Museum's evolution.

Our Renovation/Expansion Project has understandably consumed many hundreds of hours of staff time, not only in planning the new facilities, but in organizing the very complex arrangements for moving the collections in such a way as to ensure their safety at all times. In this latter connection we are fortunate to have the services of Mr. Toshio Yamamoto, borrowed from the Department of Entomology. He is doing an excellent job of planning a series of what will be almost unbelievably complex moves of artifacts and specimens within the main building during the renovation process. Mr. Yamamoto has the title of Coordinator of Collection Management and is a key member of the Associate Director's Collection Management Task Force.

After considerable site preparation the Museum was able in September 1978 to commence construction of the Curatorial Centre in the south courtyard. Excavation of the three floors below grade had to be carried out very carefully so as not to disturb the foundation of the existing building. By June of 1979 construction had reached grade level, and it is proceeding steadily. Completion and occupation of the Curatorial Centre is scheduled for early 1981. In the meantime work proceeds on the completion of the architects' detailed plans for the Terrace Galleries and for the thorough renovation of the main building.

The Museum's Private Sector Fund-Raising Campaign has been waged throughout the year under the capable co-chairmanship of Mrs. K. L. (Mona) Campbell and Mr. John Devlin. It was gratifying to note that at the fiscal year's end the total of cash and pledges stood at the figure of \$6,954,074.72. The goal of \$10.3 million will almost certainly be reached during the year ahead, and it is a pleasure for me, on behalf of the entire Museum community, to express sincere appreciation to Mrs. Campbell, Mr. Devlin, and the hundreds of other

volunteer fund-raisers, without whose efforts none of this could have been achieved.

It is appropriate at this time to pay a special tribute to our volunteer Members' Committee, now a "department" within our Education and Communication grouping of departments. During 1978-79 the chairman of the Members' Committee has been Mrs. D. J. (Ellen) Sieniewicz, who has carried out her multitudinous responsibilities with charm and effectiveness. Although not originally conceived as a fund-raising adjunct to the Museum, the Members' Committee has come recently to realize that, at least during the period of our Renovation/Expansion Project when matching Wintario dollars are available, one of the Museum's great needs is for financial support from the private sector. In addition, then, to all their many regular activities during the past year these remarkable volunteers have initiated, planned, and carried out a number of very successful fund-raising events for the Museum's benefit. At their annual meeting in May 1979 they became the Members' Volunteer Committee. Their new President is Mrs. R. S. (Dixie-Anne) Montgomery, and their gallery tour guides will henceforth be known as docents. Four major categories of volunteers—the Board of Trustees, our Private Sector Fund-Raisers, the Members' Volunteer Committee, and the Museum Volunteers—serve each and every day of the year to enrich the programmes and to enhance the significance of the Royal Ontario Museum.

I want to take this opportunity to emphasize the many services which Museum staff members perform routinely for members of the public and for governments. While such activities as the identification and authentication of artifacts and specimens, the answering of inquiries from the public, and informal consultations both with members of the public and with other scholars are well known, the work done in cooperation with other agencies, particularly government agencies, is perhaps less generally appreciated. Within the Province of Ontario the Museum's resources are utilized by the courts, the Attorney General's Office, and the ministries of Natural Resources, Industry & Tourism, Transportation & Communication, Northern Affairs, and the Environment. Federally, we are consulted by such agencies as the RCMP, Canada Customs, Parks Canada, the Department of Indian and Northern Affairs, the Cultural Property Review Board, and the National Museums Corporation, of which we are an Associate Museum.

A number of the ROM's departments, including European, Canadiana, New World Archaeology, Ethnology, Greek & Roman, and Far Eastern, are asked often by various police forces to identify suspect artifacts and occasionally to testify about them. Also, certain curatorial staff members are designated "Expert Examiners"

with the federal Cultural Property Review Board, thus fulfilling a part of the Museum's mandate of preserving our unique heritage for the enjoyment of future generations of Canadians.

The departments of Mammalogy, Ornithology, and Ichthyology & Herpetology make available the results of their systematic and field studies of animals to federal and provincial agencies concerned with natural resources and with the status of rare and endangered species. Such information is important to the Ontario Ministry of Natural Resources and other provincial government departments in formulating sound management policies and regulations concerning Ontario and North American wildlife. These same ROM departments also provide identification of specimen material for federal agencies such as the Convention on International Trade in Endangered Species and Canada Customs.

Our Department of Botany is regularly consulted by people concerned with environmental change and, in particular, with possible future climatic changes. In addition, the herbarium is one of the main clearing houses for botanical information about environmentally sensitive areas. Thus Metropolitan Toronto, the City of Toronto, and Parks Canada planning branches utilize data derived from specimens collected many decades ago and preserved in the Museum's herbarium. The Department of Botany also provides a specialized consulting service for the Poison Control Centre at Toronto's Hospital for Sick Children.

As another form of public service, our collections are made available for study to visiting scholars and students and, through loans, for research, display, and education.

Through public lectures, publications, radio, and television, the Museum reaches a broad audience beyond its own walls. Curatorial staff members conduct formal and informal classes, mainly for university students, and usually based on the collections, while teachers in our Education Services Department fulfil a similar function for elementary and secondary students. The Museum's Speakers' Bureau makes available lectures on a wide range of topics by speakers drawn from many of our varied departments. The galleries are utilized by the vast majority of students majoring in Fine Art at the local universities and community colleges. I was told recently by a visitor from the United States that there is probably no other single building on this continent that presents so many different types of visual images to an artist as does our main ROM building, with its combination of art-and-archaeology and science galleries.

The collections and the staff are the great strengths of the Royal Ontario Museum. Each year brings its share of changes, and I would wish to call particular attention to the following events:

In recognition of twenty-five years of service to the

Museum, the Board approved the granting of Honorary Life Memberships to Mrs. Helen Downie, Dr. A. Gordon Edmund, Mrs. Neda Leipen, Mrs. Barbara Stephen, and Dr. Glenn B. Wiggins.

Dr. L. D. Levine, Associate-Curator-in-Charge of our West Asian Department, spent the year 1978-79 as a visiting scholar at the Institute for Advanced Studies at the Hebrew University in Jerusalem. He formed part of a select group of four individuals who were invited to participate in a special programme on Ancient Near Eastern history. During his absence, we were fortunate to obtain on a temporary exchange basis the services of Professor David Ussishkin, the chairman of the Department of Archaeology at Tel-Aviv University. Professor Ussishkin's experience in Palestinian archaeology was invaluable in assisting the department's work with its Palestinian holdings and in formulating a gallery display for them. During Dr. Levine's absence, Dr. L. Golombek served as the Acting Associate-Curator-in-Charge of the West Asian Department.

The Museum is proud of its many Research and Field Associates throughout the world. During the year the Board gave its approval to the appointment of four new Research Associates, Dr. Peter G. Telford in Invertebrate Palaeontology, Dr. Jarmila Kukalova-Peck in the departments of Entomology and of Invertebrate Palaeontology, Dr. James E. Kenyon in Ichthyology & Herpetology, and Dr. James E. Eckenwalder in Botany.

Mr. R. McCartney Samples, former Consul-General of Great Britain in Toronto, joined the Museum staff in September 1978 as Director of Development. Mr. Joseph R. Di Profio resigned as of 30 June 1979, after three very important years as the Assistant Director in charge of the Education and Communication departments, and the Museum was indeed fortunate that Mr. Samples was then willing to assume Mr. Di Profio's responsibilities.

Mr. Tom Quirk, the Curatorial-Assistant-in-Charge of our Far Eastern Department resigned with effect from 30 June 1979, to emigrate with his family to Jinan in Shandong Province in the People's Republic of China. He has been succeeded by Dr. C. S. (James) Hsü as Assistant-Curator-in-Charge.

The end of each fiscal year brings its share of retirements, and 30 June 1979 was no exception. This year's list includes Mrs. Carol Jack, Metals Conservator with 14 years of ROM service; Dr. A. Douglas Tushingham, Chief Archaeologist (24 years); Miss Lucile M. H. Hoskins, Administrative Assistant in the Office of the Chief Archaeologist (41 years); Mr. Leigh R. Warren, Chief photographer (19 years); and Mrs. Gladys Wong, Service Employee (30 years). We wish them all many long years of happy retirement.

James E. Cruise
Director

Toronto, Ontario
31 October 1979

Auditors' Report

To the Trustees of
The Royal Ontario Museum:

We have examined the balance sheet of The Royal Ontario Museum as at June 30, 1979 and the statements of financial operations of the operating and trust funds and renovation and expansion fund for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances, except as noted in the following paragraph.

Bequests, grants to trust accounts and donations, by their nature, are not susceptible of complete audit verification. Accordingly, our verification of receipts from these sources was limited to a comparison of recorded receipts with bank deposits.

In our opinion, except for the effect of any adjustments which have might been required had we been able to completely verify bequests, grants to trust accounts and donations, the accompanying financial statements present fairly the financial position of the Museum as at June 30, 1979 and the results of its operations for the year then ended in accordance with accounting principles generally accepted for non-profit organizations applied on a basis consistent with that of the preceding year.

Toronto, Canada,
November 30, 1979

A handwritten signature in cursive script that reads "Clarkson, Gordon & Co.".

Clarkson, Gordon & Co.
Chartered Accountants

The Royal Ontario Museum

(Incorporated by Special Act of the Ontario Legislature
as a corporation without share capital)

Balance Sheet

June 30, 1979

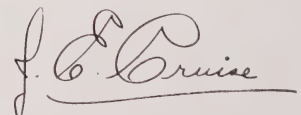
(with comparative figures as at June 30, 1978)

	1979	1978 (reclassified — see note 2(a))
OPERATING AND TRUST FUNDS		
ASSETS		
Operating:		
Short-term investments	\$ 447,455	\$ 474,583
Excavation, fieldwork and travel advances	45,061	44,991
Accounts receivable	110,363	75,284
Inventories	292,736	229,418
Prepaid expenses	22,723	70,348
Fixed assets, at nominal value—		
Land and buildings	1	1
Contents	1	1
	<u>918,340</u>	<u>894,626</u>
Trust:		
Cash	101,311	
Short-term investments	602,545	669,539
Accrued interest	120,583	85,176
Marketable securities, at cost (quoted market value: 1979—\$4,296,800; 1978—\$4,089,000)	4,217,217	4,190,767
	<u>5,041,656</u>	<u>4,945,482</u>
	<u>\$5,959,996</u>	<u>\$5,840,108</u>
LIABILITIES AND FUND BALANCES		
Operating:		
Bank indebtedness	\$ 18,087	\$ 179,356
Accounts payable and accrued liabilities	786,092	491,612
Operating grants received in advance	46,570	173,950
	850,749	844,918
Operating fund general reserve	67,591	49,708
	<u>918,340</u>	<u>894,626</u>
Trust funds (notes 2(a) and 4)	<u>5,041,656</u>	<u>4,945,482</u>
	<u>\$5,959,996</u>	<u>\$5,840,108</u>
RENOVATION AND EXPANSION FUND		
Assets:		
Cash	\$ 138,611	
Short-term investments	3,120,000	\$ 805,878
Accrued interest	22,939	1,376
Travel advances	575	
	<u>\$3,282,125</u>	<u>\$ 807,254</u>
Liabilities:		
Accounts payable and accrued liabilities	\$ 679,050	\$ 376,356
Renovation and expansion fund (notes 2(a) and 5)	<u>2,603,075</u>	<u>430,898</u>
	<u>\$3,282,125</u>	<u>\$ 807,254</u>

On behalf of the Board:



S.M. Hermant, Chairman



J. E. Cruise, Trustee

(See accompanying notes)

The Royal Ontario Museum
Statement of Financial Operations
Operating and Trust Funds

Year ended June 30, 1979
(with comparative figures for the year ended June 30, 1978)

	1979			1978
	Operating	Trust	Total	Total (reclassified — see note 2)
RECEIPTS:				
Operating —				
Province of Ontario grants	\$8,155,015		\$ 8,155,015	\$7,637,360
National Museums of Canada grant (note 2(b))	225,000		225,000	110,000
Boards of Education	88,803		88,803	84,700
Admission fees — General (note 3(a))	454,795		454,795	254,683
— Planetarium — General	192,341		192,341	158,664
— Laserium	3,835		3,835	128,667
— Heavy Water	48,207		48,207	
Museology fees and grants	61,743		61,743	87,997
Service departments (net)	53,532		53,532	37,919
Other	17,816		17,816	37,592
Trust —				
Bequests, grants and donations		\$ 291,677	291,677	259,673
Investment income		437,791	437,791	373,780
Membership fees		168,055	168,055	112,745
Admission fees (note 3(a))				41,066
Publications		119,943	119,943	112,809
Other		179,581	179,581	145,957
Total receipts	9,301,087	1,197,047	10,498,134	9,583,612
EXPENDITURES:				
Salaries, wages and benefits	6,933,438	243,256	7,176,694	6,500,533
Artifacts and specimens		166,013	166,013	124,081
Building maintenance	478,765		478,765	488,597
Rent and storage	211,645		211,645	205,742
Equipment	121,016	117,703	238,719	207,465
Supplies	351,967	101,178	453,145	490,455
Excavations and fieldwork	173,870	91,612	265,482	237,059
Galleries	94,868		94,868	132,471
Services	414,682		414,682	306,085
Travel	123,462	35,348	158,810	179,821
Ladders to Heaven exhibition (net)		92,056	92,056	
Other exhibitions (net)	105,006	4,887	109,893	121,688
Books and periodicals	76,157		76,157	65,063
Publications	71,275	76,171	147,446	77,024
Advertising and publicity	198,655	12,314	210,969	294,706
Other	78,398	10,335	88,733	56,789
Total expenditures	9,433,204	950,873	10,384,077	9,487,579
Excess (deficiency) of receipts over expenditures before the following	(132,117)	246,174	114,057	96,033
Transfer between funds (note 3(b))	150,000	(150,000)	—	—
	17,883	96,174	114,057	96,033
Fund balances, beginning of year (reclassified — see note 2(a))	49,708	4,945,482	4,995,190	4,899,157
Fund balances, end of year	\$ 67,591	\$5,041,656	\$ 5,109,247	\$4,995,190

(See accompanying notes)

The Royal Ontario Museum
Statement of Financial Operations
Renovation and Expansion Fund

Year ended June 30, 1979

	Cumulative balance June 30, 1978	Changes during the year	Cumulative balance June 30, 1979
Receipts:			
Bequests, grants and donations	\$ 650,227	\$1,908,016	\$ 2,558,243
Province of Ontario grants	240,000	3,710,000	3,950,000
National Museums of Canada grant	100,000		100,000
Financing provided by the Ontario Universities Capital Aid Corporation (note 5)	3,600,000		3,600,000
Revenues from special events	53,118	336,541	389,659
Interest	126,883	160,657	287,540
	<u>4,770,228</u>	<u>6,115,214</u>	<u>10,885,442</u>
Expenditures:			
Renovation and expansion expenditures	4,256,985	3,737,112	7,994,097
Campaign costs	82,345	205,925	288,270
	<u>4,339,330</u>	<u>3,943,037</u>	<u>8,282,367</u>
Fund balance	<u>\$ 430,898</u>	<u>\$2,172,177</u>	<u>\$ 2,603,075</u>

(See accompanying notes)

1. Summary of accounting policies

The following summary of accounting policies is set forth to facilitate the understanding of data presented in these financial statements.

(a) Fund accounting—

In order to ensure observance of limitations and restrictions placed on the use of resources available to the Museum, the accounts of the Museum are maintained in accordance with the principles of fund accounting. Accordingly resources for various purposes are classified for accounting and reporting purposes into funds that are held in accordance with the objectives specified by the donors, or in accordance with directives issued by the Board of Trustees from time to time. Transfers between funds are made, when it is considered appropriate, by the Board of Trustees. For financial reporting purposes, the funds have been classified into three fund groupings as follows:

(i) Operating fund—which includes the ordinary day-to-day operating transactions of the Museum.

(ii) Trust funds—which include amounts received and expended whose use is restricted in accordance with objectives as specified by the donors, or in accordance with directives issued by the Board of Trustees from time to time. Trust funds include the following:

a. Restricted endowment funds—

Capital funds received which are non-expendable, together with the unexpended income thereon.

b. Current restricted funds—

Expendable funds received whose use is restricted by the donor for special purpose expenditures of a current nature.

c. Board designated funds—

Expendable funds for general or special purposes which have been set aside in accordance with directives issued by the Board of Trustees from time to time. Revenues earned from certain auxiliary activities (memberships, publications, and revenue from cross teaching appointments) are also included as directed by the Board of Trustees. In addition, expendable bequests, grants and donations and investment income from non-donor restricted funds are included in this category.

Reference is made to note 4 for details of these accounts.

(iii) Renovation and expansion fund—which includes all amounts received and expended that relate to the Museum's present program of major renovations to, and expansion of, its existing facilities (see notes 2(a) and 5).

(b) Basis of recording operating and trust fund receipts and expenditures—

The Museum follows the accrual basis of accounting. Operating and trust fund income is recorded when earned, and expenditures are recorded when materials are used or

services rendered. Sustaining donation revenue and current restricted funds are, however, included in income as received.

(c) Inventories—

Inventories, which consist mainly of publications, book and gift shop items for resale, and supplies, are stated at the lower of cost and net realizable value.

(d) Marketable securities—

Investments are recorded in the accounts at cost. The gain or loss on the sale of securities is based on the average carrying value of the securities sold. Interest income is recorded on the accrual basis as earned.

(e) Fixed assets—

The land, buildings and contents, including artifacts, are carried in the accounts at a nominal value of \$1. Construction costs incurred during major renovation and expansion programs are written off. Accordingly no depreciation is recorded in the accounts.

(f) Renovation and expansion program revenue and expenditures—

Capital campaign pledges and grants related to the Museum's renovation and expansion program are recorded when received. Expenditures are recorded as incurred.

2. Changes in accounting presentation during the 1979 fiscal year

In the accompanying financial statements for the 1979 fiscal year, the Museum has made the following changes in accounting presentation:

(a) Renovation and expansion fund—

In the 1979 fiscal year, the Museum's financial statements have been reclassified to show transactions in the renovation and expansion fund separately from those in the operating and trust funds. The figures for the prior year have been reclassified accordingly for comparative purposes.

(b) National Museums of Canada Core Funding—

In the financial statements for the 1978 fiscal year a grant of \$110,000 from the National Museums of Canada to assist in financing the Museum's outreach program was netted against the related expenses. In 1979 a grant of \$225,000 for such purposes has not been so netted, but has been reflected separately as an operating receipt. The 1978 figures for operating receipts and expenditures have been reclassified accordingly for comparative purposes on the same basis.

3. Appropriations and transfers from trust funds

During the 1979 fiscal year, with Board approval, the following appropriations and transfers were made from trust funds:

(a) Admission fees—

Up to June 30, 1977, the Museum allocated to a Board designated trust fund a portion of the general admission fees to the Museum. This trust fund was set aside and its funds used to purchase artifacts and specimens. During the 1978 fiscal year, with Board approval, the Museum reduced such allocation, and in the 1979 fiscal year, discontinued such allocation entirely. All admission revenues are currently allocated to the operating fund.

(b) Transfer to operating fund—

In May 1978, the Board of Trustees approved the appropriation in the 1979 fiscal year of \$150,000 of unallocated investment income from Board designated trust funds to be applied against current operating

expenses of the Museum for the 1979 fiscal year, which transfer is reflected as a separate item in the accompanying statement of operating and trust fund financial operations for the year.

4. Trust funds

A summary of the changes in the various trust accounts for fiscal 1979 is as follows:

	Balance June 30, 1978	Add receipts	Deduct expenditures	Transfers (note 3)	Balance June 30, 1979
Restricted endowment					
—capital	\$1,086,899	\$ —	\$ (375)	\$ —	\$1,086,524
—unexpended income	383,616	104,645	(104,096)		384,165
	<u>1,470,515</u>	<u>104,645</u>	<u>(104,471)</u>	<u>—</u>	<u>1,470,689</u>
Current restricted	141,117	312,843	(225,065)		228,895
Board designated	3,333,850	779,559	(621,337)	(150,000)	3,342,072
	<u>\$4,945,482</u>	<u>\$1,197,047</u>	<u>\$(950,873)</u>	<u>\$(150,000)</u>	<u>\$5,041,656</u>

The classification of the above accounts by the Museum's management into the categories shown is based on allocations reflected in the accounts of the Museum.

5. Renovation and expansion program and related Province of Ontario and other financing

The Royal Ontario Museum has a planned program of major renovations to, and expansion of, its facilities. With respect to this program, the Board of Trustees of the Museum has approved to date construction of a curatorial centre, major renovations to existing buildings, and initial construction of new galleries and related project costs, at a total not to exceed \$44,253,000.

The maximum matching grant offered by Wintario is \$10,338,000 and the private sector campaign is aimed to attract this amount.

Based on estimates made in September, 1979, the Museum will need a minimum amount of \$5,337,000 in excess of its currently budgeted amount of \$44,253,000 to complete the project as designed, resulting from inflation and other factors. Sources of additional funding are being actively pursued by the Board.

Included in the amounts received to date is \$3,600,000 from The Ontario Universities Capital Aid Corporation, which until March 31, 1979 was the source of Province of Ontario capital funds provided to the Museum. In connection with the receipt of these amounts, the Museum has issued debentures payable in such amounts to The Ontario Universities Capital Aid Corporation which are repayable over a 30 year period. Payments of debenture principal and interest are being made on behalf of the Museum by the Ministry of Culture and Recreation of the Province of Ontario, under its related program of financial support for the Museum; accordingly the principal amount of outstanding debentures (June 30, 1979—\$3,550,706; June 30, 1978—\$3,578,474) has not been recorded as a liability in the accounts.

The amounts pledged to November 19, 1979 with respect to the project are as follows:

Province of Ontario grants	\$12,750,000
Province of Ontario grant in lieu of Federal assistance	11,000,000
National Museums of Canada grant	100,000
Private sector donations	7,312,000
Matching Wintario grants	7,312,000
Special Wintario grant for handicapped facilities	485,300
	<u>\$38,959,300</u>

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